I: Hollie G-5 (ca. 1894-1904) 1905
FL12 Masai FL12

Plate 93

231
193

Masai cattle at the foot of Kilimanjaro

Masai crossing their kraal [illegible]
[illegible]

THE BOY, HIS BROTHER, AND THEIR SONG 191

o'ng-aa, a-á-je: 'E-ší a-ike paiye ɨ-ar 539*
di-the-other, and-she-says: 'How 1-do w-that 1-kill
ema-gherai, pe a-tum en-gerai ai en-dau kitok.'
this-child, w-that he-gets the-child my the-herd big.'
E-a-ta-a ɨmma-kore 'l-ayiɨk lɨtore a-kita
And-they-become these-children the-boys big they-herd
'n-gishu, a-a-ata en-gishú eiye en-dau
the-cattle, and-they-have the-cow their which-they-suck
ake pakiyeare, a-á-j-i eng-arua a-ima-kishú,
only both, and-it-called-is the-name of-the-cow,
en-Dauka'i,
the-Dapple-grey.
E-a aka a-kita ɨ' a-ake
And-it-is only they-give (*or* do-this) when it-becomes
a-ipi-a-a' a-a-dau, a-a-eny:
they-wish-will and-they-suck, and-they-sing:
E-kita-ɨye-aka' en-Dauka ai,
the-her-breast-(the milk) the-Dapple-grey our,
Ee-gai-payai',
The-child-(of)-father,
Ka-a-a-dau O-ki ɨlotua,
Where-not-I-suck the-breast poor,
Ee-gai-payai.
The-child-(of)-father.
E-a-aka ilo a-ingilio lɨeye ɨɨn a-dau
And-it-becomes this the-song their when they-suck
ɨma-kishú eiye.
the-cow their.
E-a-ɨwɨ-aka ɨma-ɨgwenyɨai, a-a-ɨɨr-a' en-gwenio
And-she-it-enters-into this-woman, and-she-digs the-pit
O-ɨɨrua eng-ɨí.
within the-hut.

* In this word *e* changes to *á* after *o*: *o-ngishu*, the dapple-grey bull or the bull of many colours; *en-Dauka*, the dapple-grey cow or the cow of many colours. [193]

† In the third person plural of the present and future tenses of the verb *eipa-a*, to wish, the last letter is doubled.

‡ Many cattle are able to maintain their flow of milk, and this word is only used when a cow allows the milk to come on the calf being put to her udder. [201]

§ A pit forms the hearthen, used sometimes by children.

¶ *O-ɨɨr* is to dig (*intr.*), *a-ɨɨr-a*, to dig (*tr.*).

#539

No. 53. Isatyo — esatyo — Ol-le-'n-gipiko
You-have-got — which-he-got — The-of-En-gipiko
le-'nkiguni.
in-the-deserted-kraal.

You have got what the son of En-gipiko got in the deserted kraal, i.e. you are in a fix.

[The story told of the son of En-gipiko is as follows. One day he was eating meat in the slaughter-house when the place was suddenly attacked by the enemy. He managed to escape with his life and meat, but without his weapons, and he fled, hotly pursued by the enemy. He outstripped them, however, and after running some distance, entered a deserted kraal where he proposed to hide. But he soon discovered that he was not the only occupant, and a lion growled savagely at being disturbed. Thinking it more prudent under the circumstances to leave the deserted kraal, the son of En-gipiko turned round to continue his flight, when he was horrified to see an enormous serpent coiled round the post of the gate, which was the only exit, darting out its head and tongue in his direction. In the distance too he could see the enemy rapidly approaching his hiding-place. It is not related how the son of En-gipiko escaped from the dilemma in which he found himself.]

No. 54. Iro — ligon — enna — Kenyok.
You-are — clever (or sharp) — like — Kenyok.

You are as clever as Kenyok.

[Kenyok's biography was briefly sketched in the story entitled 'L-enana le-Kenyok or Enaye-Kenyok. The Masai are fond of referring to him whenever anything "slim" or of a cunning or clever nature has been performed. The constructor of the Uganda Railway, for instance, has been referred to as being on a par with him.]

No. 55. Iro — ilpiloti enna el-dia — le'nkanyita — en'l-mirwa.
You-are — proud like the-dog — of-the-kraal — of-the-warriors.

[The dogs that live in the warriors' kraals have a much happier existence than those that act as scavengers in the other kraals. Owing to the warriors' food consisting entirely of meat and milk, many bones and scraps are thrown to the dogs.]

No. 56. Inaton, ireghilghi, — etii — el-lau, — entii
You are, pre-pron, — it-is-there — the-man, — and-it-is-there
e-ya, — entii — e-ligoriyioni, — entii — e-ligoriyioni
the-male, — and-it-is-there — the-woman, — and-it-is-there — the-female.

Plate 21

Masai drawing blood from an ox by shooting a blunted arrow into one of the superficial veins of the neck.

Masai dual between two twilights.

[Facing p. 251]

[220] [314] ...elmolelshi matchbox unless a man.

One ten enyore el-ellooti, ...ilo kills some el-lem-?-nabrosh or 'morrips.

One shoo na-ishoi, nalamal na-gilo-ang ...ole a-mampoia nanj O-ningiro.

English lion-kill-ang 'a-gilo morrips also.

One lasso-ishig nanni, nalimalgi el-munshi, some ten ngiloni: "Iyo el-murtoi," also elimalgi, nalimal nalolori, nyoki ...ther el-malgani, pe nanda el-murtoi, some elim ten nalos el-nalimo, some nalitiki ala na-jore.

[197] One ...gi elimalgi, nanjiki 'morrips, nalalmgiloni el-kila some el-nalimo; nalilgeya na-gilo a lasso-ishig.

One nalilimoya nalilgarooni el-kishig nanu, nalimak O-nanaa nanaan.

One pe nyore 'a-gilo shoo, nalilgarooni el-malgani ligal elimalg el-kishig a-nalimo nan, nalimalg el-lilimo a-nanaraa.

[198] Shanni ilo-kishig na-...ipiding, elmalgi ta-lasso.

Nalimak O-nalimak na-gilo kitook ta-'i-nalingo la-'morrips, nanjiki a-nalimo a-'i-nalimoo.

a man, they do not inform him; it is kept hidden from him until the time for the celebration of the feast arrives.

If the chief meibinie-nan approves of the selection, a cloth is made for the new chief like those worn by the old men, and morrips ear-rings are obtained.

Just before the feast a small kraal, called O-ningiro, is built a short distance from the warriors' kraal.

Only milch cows are placed in this kraal.

On the day of the feast the chief is seized, for if he were told that he is to be chosen, he would run away and hide, or kill some one. The idea of becoming an old man is distasteful to him, since he will be unable to again go to the wars.

When he has been seized, the morrips ear-rings are put on him, and he is clothed like an old man. After this the work for the day is over.

On the morrow a black bullock with a white neck and belly is sought out from the herds, and surrounded by the warriors.

When the cattle go to the grazing ground, a strong man is chosen, who kills the bullock by the horn of one's length, whilst another ear pulls it by the navel.

The bullock is emptied in the way of the ...k", and skinned on the spot.

The old men then light a big fire in the centre of the warriors' kraal, and throw a bullock horn into it.

[199] * All the Masai when hunting their cattle by emitting these to the ear of the cow (Johnston's, The Scott of Africa, vol. i, p. 46).

2: Bernardi E, M-4 (no date) 1955 FL12 Masai FL12

[571] "ask the boy (candidate) various questions as to his past behaviour, and he is put on oath to answer truly".* Apparently no special ordeal such as we find among the Kipsigis is attached to this testing.

b) The operation may be performed "in the morning or the evening according to the particular custom of the family concerned" (Fox). Generally it takes place only in the morning. The operator [572] is said never to be a Masai. Generally he is a Dorobo, and sometimes a Kikuyu (Fox). This peculiarity is worth noting, especially if it is compared with the great care observed in selecting all other leaders or officers out of the pure Masai.*

[573] [574] Before the operation is performed, the candidates take a cold bath in order to make their body insensible, or remain "shivering in a state of nudity until the sun rises" (Hanoteau).* Candidates are then operated upon, outside the village near the right-hand post of the gate. The patient must not betray any sign of suffering. That would disgrace him and all his family. A few elders assist and support the patient during the operation, and help him to his mother's house after the wound has been washed. Once inside he is given food (fresh blood) and a special beverage, called *eng olpiron*, after which he is allowed to speak.

[575] [576] The circumcised youth is presented by his mother's brother with new sandals, and henceforth he is not supposed to make use of any garment worn before the ceremony. A procession by four girls (cfr. Fox), waving branches takes place to the entrance of the [577] boy's hut. The elders are again entertained with meat and beer;

[578] wife of a man has her independent house where she lives with her children and cattle. But the whole homestead belongs to the father, and it would be quite correct, though not so precise, to say: the house of the candidate's father.

* We may assume that these questions are concerned with the candidate's moral and social behaviour. Fourneau states that "prior to circumcision no youth may have intercourse with a circumcised woman. This is a rule most [579] scrupulously adhered to". The same custom is observed among the Nandi-speaking peoples.

* Cfr. the election of the 12-13 *opiro* at the *Rukúbaat*, of the *el oiboni* boys, the *ilpiroriani*, and the *melyoppian* at the *Enkanyare-Enghéshi*, of the *il oiseni* at the ends.

[580] * Lacuzon states that it is "absolutely essential that the cattle shall be in their enclosure during the whole of the ceremony". No further details are given, nor are reasons offered for this fact which is not mentioned by any of our Masai authorities. However, it shows that circumcision is not related to the cattle aspect of Masai culture.

2: Bernardi E, M-4 (no date) 1955 FL12 Mauri FL12

c) That the killing of the bull is a religious sacrifice is shown by the fact that the bull is killed in a ceremonial way, i. e. by suffocation.[**] Prayers are also offered to God, and ceremonial blessings from the bull's skin are distributed to all those present.

d) At first sight the ceremonial fire gives the impression of being inconsistent with this ritual pattern. It serves to destroy the bones of the sacrificed bull, and it is also produced at the foundation of the village of the initiates (*mangaka*). The importance of this ritual element, however, becomes evident if we compare it with the so called *pivo* relationship. *Ti-pivo* is the firestick used for producing new fire. The breaking of a similar stick by the *pivo*-elders in the main rite of *Bukungwe*, and the elders and candidates when they visit the prophet say: " This is our fire-stick, we are one ".[***]

Against the background of the above patterns, individual initiation, in the way it is now performed, i. e. by circumcision, seems to stand apart and follow a pattern of its own. This discord is somewhat striking, and one may be permitted to hazard the opinion that circumcision as such is foreign to the age-system of the Mauri. Indeed, the structure of the age-system as such has no direct connection with individual initiation.

The Overlapping Rhythm. Discussing the interval between the various ceremonies which institute the age-units we accepted the period of seven years as a good though vague, approximation. On that basis we may now assume that fifteen years is a parallel approximation of the interval between the institution of two age-classes.

The inaccuracy of any numerical computation with regard to Mauri age-system is emphasized by what we call the overlapping rhythm.

Up to this point the age-class has been considered absolutely, i. e. without relation to preceding or succeeding classes. In fact the actual institution of a class is related to other classes, and especially to that class immediately preceding and the one which follows immediately. Similarly one age-unit is related to the unit next above it and the one next below it. Let us examine the phenomenon by focusing attention on the left-hand unit. This is the second of the two units of a class, and the junior of the two. As

[**] The ordinary way of killing a beast is by emitting it in the nape of the neck. Cf. Rinzin, l. c., pp. 197, 200.
[***] Wannemacker, l. c., pp. 108 ss.

Division to consolidate or render advisable a departure on their behalf from the general policy to be pursued in dealing with the tribe as a whole.

The Tribal Divisions. The Tribal Divisions of the Bassi as they are recognised for the purposes of the administration of the tribe are as follows:—

Pedro. The Pedro is the largest and most important division. They number about 15,000 and of these some 10,000 come from Ladoyia. There are rather more than 6,000 Bassi, who inhabit five large villages. The names of the "Ayela" are 1) Kiaserepo, 2) Mandaku, 3) Ichoro, 4) Mayuki and 5) Pelimaki. In 1910, the Kiaserepo Pedro Bassi decided to divide, and while one part retained the name of Kiaserepo, the other adopted the name of "2) Kiaserepo." In 1921, the Pedro were estimated to possess 27,000 head of cattle, 1,000,000 sheep and 4,000 donkeys. They live in the country known as Ngaisi and in 10 Orchards.

Lotte. The population of the Lotte Division is about 4,000 of whom some 700 are Bassi. The division formerly lived near Ngong but when Sudan, their ambition was controlled with Lenana, they moved into German territory returning subsequently to the Lotte Hills where they now are. The Bassi "Ayela" are known as 1) Paragoro and 2) Kiaserepo. The Lotte are estimated to possess 40,000 head of cattle, 600,000 sheep and 700 donkeys.

Il Chamus. A small division known as the 1) Chamus inhabits the lower region of the Lotte. They number about 800 of whom 40 are Bassi. They are said to possess 1,000 head of cattle, 10,000 sheep and 100 donkeys. A small number of 1) Chamus also live in Ormanie East Africa.

Kore. The members of the Kore Division generally inhabit the Lotte Country and their recognise Seroko as their Laiboni. Their population is estimated at 800 of whom about 40 are Bassi. They possess 4,000 head of cattle, 10,000 sheep and 100 donkeys. A small portion of the Kore have amalgamated with the 2) Kiaserepo.

Kisa. The Kisa Division also recognises Seroko as Laiboni. They inhabit the 2) Chamus country, number about 1,000 of whom 60 are Bassi, and possess 15,000 head of cattle, 40,000 sheep and 60 donkeys.

Il Tuaro. The 2) Tuaro have one location with Pedro by whom they were recognised some years ago. They are to be found on the Lotte Plains and number 600 in all of whom 40 are Bassi. They are estimated to possess 4,000 head of cattle, 20,000 sheep and 100 donkeys (see p. 91).

Kiaserepo. The members of the Kiaserepo Division number 4,000, of whom 500 are Bassi, and possess 30,000 head of cattle, 200,000 sheep and 1,000 donkeys. They inhabit the country known as 2) Ngaisi and Bassi, and the amalgamation of Bassi forms. The "Ayela" of the Bassi are named 1) Mayuki, 2) Paragoro and 3) Kiaserepo.

2) Kiaserepo. The 2) Kiaserepo inhabits the country near the Ormanie border north of Lake Magadi. The population numbers 1,000 of whom 80 are Bassi, and they possess 10,000 head of cattle, 80,000 sheep and 100 donkeys. The Bassi are divided into two "Ayela" both known as 2) Kiaserepo.

Ngurumo. The Ngurumo have a survival of the old agricultural Bassi, but they have abandoned agriculture and now live in the same manner as the pastoralists. They inhabit the country near the mouth of the Uaso Nyiro River. They number 400, of whom 40 are Bassi, and possess 1,000 head of cattle, 10,000 sheep and 40 donkeys.

Mokopo. The Mokopo number 4,000, possess 40,000 head of cattle, 170,000 sheep and 200 donkeys. Their Bassi number 100 and are divided into three "Ayela" named 1) Ichoro, 2) Tokopo and Bassi, and they inhabit the country between Kajiado and the Ormanie border.

G.S.A. The Eighteen of the Bagirmawi inhabit the country to the south-east of Nguru, the Dyang Hills and the Dalgoro Range. To the division falling the southern half of the Liman Valley, of which Bagi is now the chief. The Division is estimated to possess a population of 1,000 of whom 100 are Women, 30,000 head of cattle, 40,000 sheep and 500 donkeys.

G.S.B. The B Dala Lakurdi came from Lamiyan in 1910 and are sometimes known as the Yiwei Dalas. They have a considerable proportion of Kibaru blood in them. Their district generally the neighbourhood of the Dalgoro Range, and their people are estimated at 700, including some 70 Dyang. They are said to possess 1,000 head of cattle, 30,000 sheep and 10 donkeys. Their Women are divided into two "Gaka" named B Dalala and Gaya.

The Kapsiki are to be found in the neighbourhood of the Yiwei Dalas. Their Kapsiki population is estimated at 3,000 including 170 Women, and their possession at 30,000 head of cattle, 100,000 sheep and 200 donkeys. Their Women are divided into four "Gaka" whose names are G Mokwalo, G Mogwalo, G Kolmoso and G Kolgo.

G.S.C. The Eighteen of Lamidiwak inhabit the country to the north of N'Gwaraiyam, which country is owned by the Dagwa Dyangs, N'Gadidiwa, Kumaiwa, Ni-a Fumdi and Kwaiko peasants. The population of this division is estimated to number about 5,000 of whom 500 are Women. These are divided into two "Gaka," named B Lawal and B Mojwalo. The two-pound possessions are said to number 40,000 head of cattle, 170,000 sheep and 200 donkeys.

G.S.D. In addition to the Bwaz, there are considerable numbers of N'Gwaraiyam ("B N'Gwaraiyam") living in the Bwaz Reserve. Their numbers are probably not less than three or four thousand, and many of them possess considerable herds of cattle, and live the life of ordinary Bwaz, from whom it is difficult to distinguish them. They may be conveniently divided into two classes, namely, those who live in the bush and hunt, and those who possess cattle. The former possess little or no live-stock, and subsist almost entirely upon wild animals and fruits, while the latter live in villages and subsist only to a very limited extent on game.

The former are to be found mainly in the neighbourhood of the Bwaz, but small parties of them are also met on the Yiwei Dalas, on the Lower Bwaz River, along the Dalgo border, and in the Yiwei-Bwaz region. They live on raw animals and the smaller game animals, in rough shelters in the forests, or in the huts in parts of the Bwaz villages.

The latter are to be found on the Yiwei Dalas, in the neighbourhood of N'Gwaraiyam and N'Gwaraiyam Dalas, on the western bank of the Bwaz River, and in the Bwaz country. In all, they probably number about 1,000.

G.S.E. There exists in the reserve a special tribe of smiths, somewhat similar to the N'Gwaraiyam, called B Kwaiko, who make iron weapons, but are treated as outcasts, and are not allowed to marry Bwaz women.

G.S.F. The inhabitants, the Bwaz are a lordly, conservative, district people, Bwaz-Dalas nominally governed by Council of Elders, who often themselves to be hereditary, but who are still sufficiently autocratic to render sufficient the authority of their station. They have been encountered in one area, where they have possessed enormous herds of cattle of a very superior and exquisite shape. No definite census of employment has as yet been found for the males of the tribe as a whole, though they are capable in the way of work, and were possessed fighting qualities of a savage nature, which opposed the terror of their name for well nigh. They have considerable lower powers of organization, chieftains and elders, but these are largely dominated owing to their superstitions. They have always evinced their friendliness to the Government and have never been responsible for any serious disturbance, being too proud to fight, and not enough to disregard them, they are probably the most backward educational matrix who in the Bwaz Area, Pagansonia.

[illegible]

[illegible]

[illegible]

[illegible]

Between the King and Sun, if they were prohibited to serve, they would be allowed to provide deputy. After this, the treaty was considered and fully explained to them, and the Maori officers made marks in the presence of the European officers. The treaty was then sent to Normanby to accordance of Maoriland and each of the chiefs as soon as were to attend the meeting or signing agreement of the terms.

The agreement, as drafted, was submitted to the Governor of Wales, who approved of the terms, for religious, on the 20th of May, and by despatch on the 30th of June, 1841.

[illegible]

The Maori were accordingly informed that the Government had agreed to their meeting from the Northern Districts into an extended Southern Territory. The terms was arranged to proceed along four routes throughout June, July and August. The composition of any Maori war party and administrative and commissary officers were detailed to escort the order of route across the European forces.

[illegible]

One of the routes which proceeded by Lake Taupo, were brought into the extended Southern District, and Maori who travelled by this route were reached the Lake Taupo. The other three routes converged on the top of the Maori area - the Provincial Land. The first Maori to arrive on the ground were right through to their destinations, but the succeeding parties, finding the growing good, unplanted, covered their heads, and decided not to push forward into the enemy lands. Unfortunately, no precautions were taken to inform them to have the planting, and there was consequently a great congestion at the very commencement of the harvest rains, which usually fall on the Maori grounds the end of August and in September. The roads became impassable, and the people and much suffered from cold and discomfort. They accordingly returned to the European forces lying between Wiroa and Whakatane Province on the Opotiki Railway.

[illegible]

In consequence of this check, the Secretary for Native Affairs and the Director of Agriculture were sent, on August 21st, to investigate the situation, and they reported that there was nothing to show that the harvest was other than temporarily checked. In fact, however, considerable alarm at the news of some of the people, and a double opposition, were particularly on the part of Legislators, to submit to the terms.

[illegible]

As it was impossible for the Maori to remain on European farms over the harvest, for any length of time, the Governor issued directions for them to be sent back to the northern part of Lakelight, and to the land belonging to the Ruatahuna Tribe, adjacent to the former Northern Maori Reserve. The carrying out of the necessary arrangements were entrusted to Mr. John Alexander, Provincial Commissioner, Opotiki, who met the Maori representatives at Wiroa, Waiotahi and Opotiki early in September. Mr. J. A. Hill placed 100,000 acres of Ruatahuna land at the disposal of the natives, and the above agreements into this land was completed by September 30th.

[illegible]

The chief was undoubtedly the result of the Maori having proceeded too quickly. The general harvest was often ruined by European farmers through Maori farms that were growing in their land, the former being desirous of trying to open up a trade with them. No police measures of any kind were adopted, applying to the volunteer character of the force. It appears that the Maori did not suffer in any manner for the journey, and the large expenses were those which would naturally have given to large concentration of stock.

[illegible]

The terms had brought to light new modes of investment, purchase and selection of the natives of stock purchased by the Northern Maori had been greatly underestimated, and the probable figure was computed at 200,000 cattle and 1,000,000 sheep, a large increase over the original estimate, made in 1841, of 60,000 cattle and 1,000,000 sheep. This work we were should have been ready to commence for the expenditure expenses of the Maori to the crossing of any of their land.

[illegible]

various matters were discussed at the meeting. The Council accepted their views that they were opposed to the location scheme, as applied to the others, though they were willing to accept the idea as applied to the Sheets. The allocation of certain sites adjacent for the erection of motor mills on temporary occupation licences was agreed to by the Council, who also approved the establishment of any further trading centres at places where the Commissioner considered them advisable. Enquiry possibilities of self-supporting were directed to represent the position to the Council when the latter should be unable to attend.

In regard to the land administration of the Sheet, the Council considered that the "Sheet" system should be continued for the coming age of Sheets, as the system made for better control, but agreed that the "Sheets" should be small and that the Sheets should not change their "Sheets" after these had once been made up. The coming Sheets were to be forbidden to carry on the practice of cohabitation with young girls, and the Council agreed that it would be beneficial for a number of Sheets, according to the size of each "Sheet," to go out to work, either as family, or as schools. It the same time, they considered that they could not approve such a decision unless and were opposed to the idea of purely [illegible] labour.

[illegible]

(1) Council	[illegible]
(2) Judges	[illegible]
(3) Sheets Party [illegible]	[illegible]
(4) Sheet Trade Sheets	[illegible]
(5) Sheet and Sheets Sheets	[illegible]
(6) Sheetwork	[illegible]
(7) Sheets Sheets	[illegible]

(3) Sheets.

The two most serious work Sheeps which are encountered in the Sheet country are Sheet Creek Sheet and Sheepcommando. A number of other Sheeps attack the Sheets and herds at various times, but these two are responsible for a higher mortality than any of the others.

That Sheet work should be largely subject to Sheeps is only to be expected, in consideration of the enormous numbers of cattle and sheep located in the country, and of the consequent congestion in the grazing areas. Treatment of the Sheeps has not yet been undertaken in any comprehensive manner, though it has been suggested and approved in the case of some of them. But the necessity for making any treatment arrangement successful applicable throughout the country, if [illegible] is to be obtained, has in turn now rendered the staff available insufficient to cope with the amount of work that would require treatment, and but little actual progress has been made. It is readily recognised that the provision of veterinary facilities for Sheet work is among the most important matters now before the administration, but owing to the impossibility of procuring the necessary increase of personnel, material and funds while war conditions persist, it is also recognised that this must stand over until the conclusion of hostilities.

At the end of 1917 and the beginning of 1918, the Officers in Charge sent in frequent reports of Sheeps which were affecting work in the Sheet Districts. An estimate that between May, 1917, and March, 1918, the Sheet had lost in Sheeps more than one hundred thousand head of cattle and about one million sheep. Sheet Creek Sheeps, Sheepcommando, Sheet and Sheeps Sheeps and other diseases were to such prevalent in epidemic form in almost all parts of the country.

In a number of the Sheeps affecting Sheet cattle and sheep some of an obscure nature, it was decided that careful investigations would be necessary to ascertain their causes and, if possible, to devise methods of prevention and treatment. A branch laboratory in Sheetburn, now in course of construction near Sheets, and it is hoped that it will be possible to carry out research work

(Sheet)

6a

Game Reserves

Animals. The necessity for a veterinary survey of the Game Reserves has resulted in instructions being issued to a veterinary officer to visit the reserves with a view to obtaining accurate information as to the incidence and prevalence of the various stock diseases, and Dr. Hinde has been occupied with this work.

Game Reserves

In addition to the large known damages of animals, numerous offences have been reported from time to time by the Officers in Charge as a result of reports submitted orally by the Rangers, of which the majority has only as yet been established. Among these is a serious injury to the Game on Chagga, a work derived from the Game Game for a withdrawal. The Game state that the great increase poisoned in the plains where the wildebeest have arrived, and that any cattle which graze on such plains invariably succumb. In view of the fact that there is lack of supervision, but it is impossible to discuss the report without investigation, and it is a fact that the Game avoid the plains during the time there animals are calving.

Game

The eastern portion of the Game Reserve coincides with the Southern Game Reserve, and the effect of the game on the stock therein has in consequence frequently been a matter of discussion. It is known that certain species of game are constantly or periodically infected with various diseases injurious to cattle, but it is generally thought that the preservation of the game does not materially affect the Game Laws, mainly on account of the fact that the Game, being expert marksmen, are sufficiently observant and astute to effect a kind of compromise between their cattle and the game which enables to a minimum the chances of their utilising the same grazing grounds.

(b) [illegible]

Outbreaks of [illegible] in the Game Reserve have been reported from time to time, and in several instances natives have died as a result of handling or eating the carcasses of animals which have succumbed to this disease. An increase in the prevalence of [illegible] was noted early in 1916 when it was stated that from one to three per cent. of the Game cattle had died from it, but the Officers in Charge did not consider that there was anything in the nature of an epidemic and reported that it always appeared to be greater in a certain area several times during periods of drought.

(c) [illegible]

[illegible] (a) [illegible] in Game and Game Reserve, May 1916. Outbreak in Game, July 1916. Outbreak in Game, November, 1916. Report of Dr. Hinde. Game Reserve [illegible] Game. Game Reserve. Game Reserve. Game Reserve

[illegible] [illegible]

[illegible] [illegible] [illegible] [

Mr. Kennedy, Acting Chief Veterinary Officer, Mr. Hansford, Inspector, etc.

On August 30th, Mr. Hansford expressed a desire to modify his previous statement that no great difficulty would be experienced in the collection of the inoculation fees, for he proposed was higher than he had anticipated and it appeared improbable that the Maori could procure Rs. 400,000 for payment of cash fees in cash. The cattle market was closed, as their cattle were unsaleable, and the collection would be rendered more difficult by the absence of legal machinery to enforce it. He advocated a reduction in the fee and suggested the promulgation of a special rule providing for the compulsory inoculation of all Maori cattle and for the recovery of fees. In the alternative, he thought that the imposition of a cattle tax would obviate the necessity for charging inoculation fees in addition. He considered that it would not be impracticable to induce the Maori to inoculate their own cattle, which course, though open to certain drawbacks, would possess the advantage of dealing quickly with the outbreak.

Captain Bradshaw's visit, August, 1917.

As a result of his visit to the Maori Reserve in August, 1917, Captain Bradshaw framed recommendations, mainly of an administrative nature, which included proposals for the erection of fences a quarter of a mile apart across transport roads on the reserve boundary, necessary to prevent the infringement of quarantine restrictions by persons in charge of ox-transport, an increase in the police force in the reserve, and the marking out of a neutral zone two or three miles wide, surrounding the reserve, in which no cattle should be allowed except on authorized routes. Measures should be taken to prevent cattle in the reserve belonging to traders from leaving the reserve, and he suggested that all movement of cattle both into and out of the reserve should be prohibited.

Mr. Kennedy visits Rotorua, Sept.

Early in September, Mr. Kennedy, the Acting Chief Veterinary Officer, visited the reserve and, with Mr. Hansford, interviewed several Maori chiefs. He gathered that the natives were opposed to steps being taken to combat the disease. The cattle in the reserve numbered approximately 710,000 and, to complete the inoculation within a period of twelve to fifteen months, he estimated that a staff of eight Veterinary Officers, fifty Stock Inspectors and seven hundred and fifty natives would be necessary.

Results of investigations of Mr. Bradshaw.

In the course of his report, dated the 11th of September, Mr. Kennedy wrote:—

"It has been our experience that, when well-known diseases come under notice in this country, they exhibit peculiar variations in virulence, symptoms and course, and do not strictly conform to the standards laid down for them in other countries. Bearing this in mind, it is apparent that, before any definite action is taken with regard to general inoculation against bovine pleuro-pneumonia, it is very desirable that the disease be fully investigated.

"As an example of the difficulties to be overcome as regards inoculation, I may mention that the Acting Assistant Veterinary Pathologist has been making post-mortem examinations of infected animals during the past three weeks without once finding lymph suitable for inoculation.

"No definite scheme for inoculation can therefore be suggested until the results of Mr. Bradshaw's investigations come to hand."

Mr. Kennedy recommends inoculation.

The Director of Agriculture, however, considered that inoculation should be commenced without delay, to such an extent as the available staff allowed. He recommended an appeal to the military authorities for the release from military service of all Veterinary Officers recalled thereto, and suggested that application be made to the Rehabilitation Paramounts for the loss of the services of Mr. Chase for a period of six months. These steps were taken, but it was found impossible to spare Mr. Chase from Rehabilitation, and the military authorities regretted that the Veterinary Officers could not then be released from their military units.

Mr. Kennedy's report.

Towards the end of September a report was received from the Acting Veterinary Pathologist on the subject of the cattle disease in the Maori country considered to be pleuro-pneumonia. Difficulties had been experienced in obtaining cases typical of pleuro-pneumonia, experiments had been conducted with the

material brought to Naivk, and six animals had been inoculated with large doses with practically no result. Mr. Kearney, therefore, was led to conclude from this evidence that it would be undesirable to attempt any inoculations on a large scale until the nature of the disease had been clearly established. Such precautions action might cause heavy losses with alien bacteria, and effect no immunity to the existent disease. In view of the danger of introducing the disease into a clean area, he considered it inadvisable to conduct further experiments at Kabete, and, as it was necessary thoroughly to investigate the pathology of the Masai disease, he was of the opinion that further research should be conducted in the Masai Reserve, where abundant material for investigation was at hand. He therefore recommended the early erection and equipment of a Field Station within the reserve. Two thousand pounds would be required to erect and equip a laboratory for the preliminary investigation, while subsequent development and investigation would depend upon the results obtained.

Mr. Kearney's proposals received the support of the Governor-in-Council, and his suggestions were reported to the Colonial Office by despatch on the 11th of October, 1917.

On the 16th of October, a rule under the Diseases of Animals Ordinance was signed, prohibiting the introduction of any trade cattle into the Masai Reserve.

A site suitable for the branch laboratory was selected on the left bank of the Uaso Narok, some three miles down-stream from Naivk Station, and an area of 500 acres was to be reserved there as a site for so long as the laboratory was necessary. Work was commenced in January, 1918, and Mr. Swinburne proceeded to the reserve to superintend.

On October 22nd, 1917, Mr. Hemsted submitted a memorandum on the general question of pleuro-pneumonia in the Masai Reserve. He insisted that the Masai would not welcome inoculation or any other steps that might be taken for the eradication of pleuro-pneumonia from amongst their cattle, but, although no assistance could be expected from the Masai, he saw no reason to suppose that any actual opposition to inoculation would be encountered. Their losses had not been very heavy and the disease had practically run its course. The cattle of the Siria Masai in the west and those of the Nightarai of Laikipiak in the east of the reserve had escaped infection, being entirely isolated from other herds. Mr. Hemsted thought that the estimates given by Mr. Kearney of the staff required for the inoculation, and of the time which the undertaking would take, were too low, and he understood that the inoculation was only effective for a period of two years. The presence of large herds of buffalo and other game would have the effect of perpetuating the disease. He again advocated the imposition of a cattle tax, in preference to the levying of inoculation fees. The establishment of additional police posts on the borders of the reserve would diminish the chances of the infection spreading outside. He was of the opinion that, inasmuch as the Masai stock was run under almost natural conditions, the methods employed in respect of European stock could only be applied with difficulty, both as regards its management and preventive measures against disease. The position resolved itself into that of the natural struggle for existence, and the Masai herds would eventually overrun Africa, if increase were unimpeded by disease or restrictions of grazing. Grazing was, however, restricted and the reserve, he said, was stocked to its fullest capacity; no benefit would therefore accrue to the Masai by saving from pleuro-pneumonia cattle, which would probably die subsequently of starvation or some other disease. The eradication of pleuro-pneumonia could only be considered in conjunction with questions affecting the general development of the Masai as a stock-producing asset to the Protectorate, and but small results would be achieved by confining our energies solely to the inoculation of Masai cattle against that disease. He warmly welcomed the proposal to erect a branch laboratory in the reserve which would deal with all forms of stock disease.

In November, 1917, Mr. Hemsted reported the presence of anthrax and rinderpest in most parts of the Masai Reserve, the latter having broken out in a very severe form and leading him to think that the previous immunity to rinderpest attained by the Masai cattle had been impaired by pleuro-pneumonia.

In the same month, the question arose of the advisability of moving the Mawi cattle back from the Kadoshi and Sinoia to some area still reserved from the European farms. It had been agreed that these cattle should not be removed until they had been inoculated against pleuro-pneumonia, but, in view of the results obtained by Mr. Bradshaw, it appeared probable that some considerable time would elapse before a satisfactory method of inoculation could be carried on, and it was considered that if inoculations were attempted with unsatisfactory results a bad effect would be produced on the native mind. Mr. Kennedy therefore suggested the immediate removal of these cattle, but Mr. Hemsted contended that hardship would be caused to the Mawi by depriving them of grazing grounds, and also that it would be unwise to move cheap cattle into an infected area without endeavoring immunity by inoculation. The decision given by Government in the matter was that, as the disease appeared to be decreasing, no area should be declared, but that the Officer-in-Charge should order the Mawi whose herds were about to take every precaution, and that any sign of disease appearing amongst their herds should be immediately reported.

Removal of Mawi cattle from Kadoshi and Sinoia.

In May, 1918, the Officer-in-Charge reported that he had been unable to find any case of pleuro-pneumonia during a recent tour in parts of the Darwin and Mrewa districts, and that the Mawi in the areas visited had informed him that the disease was entirely non-existent among their cattle. He therefore recommended that the quarantine restrictions be withdrawn, but the Chief Veterinary Officer was unable to support this recommendation until a careful veterinary survey of all the cattle in that area had been carried out. The slaughter of cows, purchased for military requirements in July, 1918, gave evidence that the disease was still prevalent in parts of the reserve.

(B) East Coast Fever.

In August, 1914, East Coast fever in the Mawi Reserve was confined to the neighbourhood of Ngomo Station, to the country near the Sabi border, and to the Inyoka Native District. Mawi cattle appeared to have had a certain degree of immunity to the disease, but the Officer-in-Charge was inclined to think that the cattle which had come from Lochgelly were less immune than those which had previously resided in the Northern Reserve.

In June, 1918, the Mawi complained of the losses they had suffered from East Coast fever in the Mrewa region and in Chikaka's country.

In November, 1917, reports were received that this disease was spreading rapidly along the west bank of the Mawi River, in the Lower Valley, and along the Sabi border. Steps were taken to place the infected herds in local quarantine, but these were unsuccessful, and in March, 1918, the Officer-in-Charge reported that the disease had spread to parts of the reserve previously free from it. It had appeared at Nyoka, in the Lotia Hills and Phoka, in the neighbourhood of Kia, at Kajimbo, Bvuli and Nyamaga, and the infected area in the Mawi district had increased considerably. In view of the fact that Mawi cattle are highly susceptible to East Coast fever, Mr. Hemsted recommended that a dipping scheme should be devised as soon as possible in order that a commencement might be made towards the control of the disease. The Chief Veterinary Officer agreed that such steps should be taken by erecting cattle dips and encouraging the Mawi to use them. He supported a proposal by Mr. Hemsted that seven dipping tanks, in addition to that already in use at Ngomo, should be erected in the vicinity of the Government stations in the reserve, where they would be under constant supervision, and that the Mawi should be encouraged to use them. As he considered it probable that some time would elapse before the Mawi became convinced of the benefits derived from this treatment, he suggested that immediate steps be taken to commence dipping demonstrations, but it was pointed out by the Governor that a necessary preliminary to the provision of dipping facilities would be the carrying out of improvements in the water supply, and that this question was dependent on the effect of the cattle tax proposed for imposition on the Mawi (*vide* Section E).

It is possible that much of the mortality attributed to East Coast fever is really the result of a disease known as heart water, which is described as a fatal disease, very similar to East Coast fever. There is as yet no evidence to support this idea.

East Coast fever appears to be the only cattle disease which the Masai really fear, and is, in fact, the disease which causes by far the highest mortality among their herds. Nevertheless, they have not come forward very readily to make use of the cattle dip which was erected at Ngong in 1914, and it is evident that, in addition to the superstition which prevents them from taking advantage of such an innovation, they are also too short sighted further to go to the trouble of making the treatment a matter of regular routine. In time, however, it is to be hoped that they will come to appreciate more fully the immunity which dipping confers upon their stock, and, when this realization has been attained on, it will follow that large herds of otherwise valuable breeding cows will become available within their reserve for their own and their stock's food, thus leading to relieve the congestion which is now noticeable in those parts of the reserve which are considered by the Masai to be suitable for their cattle.

(2) Foot and Mouth Disease.

Foot and mouth disease has not given serious cause for anxiety to the Masai Reserve. An outbreak was reported in June, 1917; and in February, 1919. It was said to be very prevalent in the vicinity of the villages situated in the Kisii and Nyeri districts. Accordingly, in that month, the Chief Veterinary Officer prohibited the removal of stock from the reserve.

The direct mortality from this disease is slight, but it very seriously affects the milk supply, and indirectly it causes a certain amount of loss, as infected animals, being in a weak state, are unable to move about sufficiently to obtain the necessary and adequate grazing, and, as a consequence, they may die of starvation.

The disease was reported in May, 1919, to have practically died out.

(3) Trypanosomiasis.

Trypanosomiasis has been reported in the Masai Reserve for many years and the majority of which Masai cattle are immune. It was rife in the Northern Masai Reserve from 1909 until the completion of the move in 1913, and several outbreaks in both the Northern and Southern Reserves were reported between November, 1918, and January, 1919.

Anti-trypanosomal inoculation was carried out where practicable and a large number of Masai cattle were thereby protected, with the result that the mortality was very low.

For the most few years trypanosomiasis has more or less decreased, but it became especially prevalent early in 1919, and heavy mortality ensued among the calves, of which it was estimated that about fifty per cent. of the annual increase succumbed.

The Masai have proved to be opposed to the treatment of their cattle for trypanosomiasis against rinderpest, as they ponder that immunity shall be obtained by the natural process of the survival of the fittest.

(4) Tsetse Fly.

During the tour undertaken in October, 1919, by the Director of Agriculture, accompanied by Messrs. Hill and Chaplin, the Director of Public Works and the District Commissioner, South Kavirondo, no signs of tsetse fly were seen along the route traversed, and the cattle met with did not appear to be troubled by the ordinary biting fly. On a previous visit the Director of Agriculture had noticed a number of "Serengeta," and he stated that the fly was fairly common all over the Protectorate, but that so far as was known it did not carry any cattle disease.

Tsetse in the Masai Reserve.

[illegible]

In March, 1914, an enormous [illegible] was received from the Northern Rivers Reservoir Commission, but reports had come in that the Board would have much during portions of the year from certain catchment areas where fly was supposed to exist.

Mr. Anderson

In response to a request from the Secretary of State for further information on the subject, Mr. Anderson, the Government entomologist, toured parts of the reserve during the months of April and May, 1914. His report dealt mainly with the different parts of the region examined.

I.—The Upper Richmond Valley.

A low swampy tract of country, from one to three miles wide and covered with dense bush and tall, coarse, rank grass, lies on the western side of the Upper Richmond between the river and a high mountainous. Both *Glossina palpalis* and *Glossina longipennis* were found all over this region.

Glossina palpalis was not confined to the banks of the river, but was distributed over the whole area, and specimens were taken at all hours of the day.

Glossina longipennis was found to be fairly common on the scrub covered flats and on the banks of the river and was very active in the region.

II.—From the Upper Richmond to the Bellinger River.

Both species of tsetse fly were taken on the slopes of the mountains and for six or seven miles to a westerly direction from the mountain. *Glossina palpalis* was found at an elevation of nearly 2,000 feet above sea level. The fly was found in the Langanbula, Bostyn, Kunnuck, Nymboi and Nambucca State reserves.

III.—The Valley of the Bellinger River.

Unfavourable weather conditions hindered investigations in this neighbourhood and no tsetse fly were found.

IV.—The Region of Coff's Harbour.

No trace of fly was found in the small portion of the Coff Valley which was examined and the presence of large numbers of cattle and horses indicated that the valley was free from fly.

V.—From the Bellinger River to Tweed.

No fly areas were discovered in this region.

Dr. Woodcock, who accompanied Mr. Ewart (Moffitt) on his tour to the Upper Richmond in June, 1914, spent several days investigating the presence of tsetse fly in the Bellinger River Valley. Only one specimen of *Glossina* was discovered during his visit, but from observations made and from reports of the Board officials he believed that a species of *Glossina* existed on the Bellinger River below the bridge, mainly on the western bank, to an altitude of 1,000 feet above sea level. He did not consider the presence of this fly to be of much importance, as settlers with their cattle had been living for many years in close proximity to the fly area without any serious loss of stock.

The *G. brevipalpis* country is fairly free from fly, but one or two places are known to be infested, notably in the valley of the Clarence stream, on the Lower Bogan, Lachlan (Upper) and Bogan-Macquarie Rivers.

Mr. Anderson's reports were forwarded to the Secretary of State who replied that, while Mr. Anderson had covered much of the ground, a considerable amount of investigation was still required as to the prevalence of tsetse fly in the reserve, and requested that arrangements be made for a further investigation of the region at the first suitable opportunity. Mr. Anderson represented that owing to climatic conditions July was the most favourable month for examining the properties, and his engagement was accordingly fixed for July, 1914. During that month, however, he was engaged on other important investigations in Sydney, and his tour was indefinitely postponed in August, 1914, owing to the outbreak of war.

[illegible]

[illegible] government on other cities. But the present conditions have altered this by the establishment of the foundation of the country, and in addition to the demonstration caused by the lack of land itself and consequent on breeding, the cattle suffer from want of pasturage and water in certain parts of the land that has been allotted to them. It is found generally that the quality of land obtained from Board cattle is very poor and is tending to become worse.

[illegible] Owing to this deterioration, the Director of Agriculture suggested the immediate provision of a pure-bred bull for crossing with selected native cows. The experiment was tried, and the bull was sent to Tiumbi, where it died in 1911, having left a few useful calves but not having survived long enough to demonstrate the ultimate effect of such an enterprise.

Mr. Hemmant suggested the establishment of a Government stock farm, in the endeavour to improve the progress of the Board, and intended solely for the benefit of the tribe. This would be of an experimental nature at first, but would be developed on correspondence acquired, and as funds permitted. The half-bred stock produced on the farm, especially the bulls, would be sold to the Board with the object of improving their herds. In conjunction with this farm a dairy industry might be started, and the Board taught to manufacture ghee and dairy products. This would tend to make the scheme self-supporting. As a commencement Mr. Hemmant asked sanction to purchase up to one hundred native cows in Indore and a few pure-bred bulls, and to establish a farm in the reserve to consist of the lands derived from the Board Purposes Account.

The proposal received the support of the Director of Agriculture, who thought that the existing native might thereby be advanced in the improvement of Board cattle.

The scheme was discussed by the Committee of Council on the 14th of April, 1911, when a decision was given that the time was inopportune for the establishment of such a farm, and the further consideration of the matter was postponed until the conclusion of hostilities.

[illegible] Before proceeding on leave in April, 1911, Sir Henry Sutcliffe recorded the following minute on the subject of the development of the Board:—

"The proposal that the establishment of a stock farm" is based on the assumption that the policy of the future is to develop the Board on pastoralistic. If this assumption is correct, the proposal is sound. Personally, I would confine the operations of enormous herds gradually discouraged by taxation, and encouragement given to industrial habits. Further, I would confine to any kind, and export monthly permitted by our Ordinance granted either free to the Board. The proposal should stand over until the question of taxing of the Board cattle has assumed a more definite form."

[illegible]

Purpose of the company. Description of the company. Stranger's invitation to the Board to purchase cattle on Company. Difficulties necessary to this. Application for privileges of rights to Stranger. Conditions sent by the Board according to custom. Board of negotiation. Proposed application. Meeting of the Board. Completion of the necessary. Decision by Board Council as members of Company.

The D.C.Lands Company, which leases large to the Colony of the Board Horses, is a necessary field according to Board tradition at intervals of approximately seven years. The duration of the company is from three to six months for each tribal division or group of divisions, and the duration for the whole tribe may, therefore, take from two to three years.

Purpose of the company

The purpose of the company is not too clear, but it is said to be for the handing over of the granting of the Board country to the incoming age of regulars, and it takes place a year or two before the circumcision ceremonies. On the completion of these ceremonies, the past age of Board receivers to take wives and go out as Elders. A similar proceeding used to be held by the Board, but at the close of the expedition of 1905 the Board was induced to hand over the granting of their country to the Government. In the case of the Board the ceremony would appear to be both commercial and ceremonial.

In June, 1911, the Provincial Commissioner, Nairobi (Mr. Lyon) remarked that no tribes in the Nairobi Province with the exception of the Masai and the Ukamba tribes Masai were in a position to pay an increased hut tax. Mr. Lyon would very much like to see a cattle tax imposed on the Masai instead of a hut tax.

On the 21st of March, 1912, a circular was addressed to Provincial Commissioners asking for their views on the possibility of increasing the direct taxation of natives in any part of the Protectorate.

Mr. Griffiths, then Provincial Commissioner, Nairobi, replied that the Masai were increasing rapidly either owing to the enormous increase in their stock, which increase was largely due to veterinary advice coupled with the privilege of two raids. He stated that the increase per annum in Masai calves was now 40 per cent. greater than in years past. The Masai could certainly stand a large increase in their taxes, and he advocated the imposition of a hut-tax or cattle tax only a fair demand in return for the immense assistance they had received from the scientific knowledge placed at their disposal by the Government.

Mr. Dunnworth considered that pastoral tribes in reserves should be subject to either a cattle tax, or a grazing tax, or a cattle horse tax. If a cattle tax, he suggested collection at the rate of one rupee per ten animals, fifty cents per half or ox, and six cents per sheep or goat. If a grazing tax, one rupee per five acres. And, if a cattle horse tax, eight cents per head of full grown stock per annum (sheep and goats not being taxed), together with a tax of Rs. 5 on each horse living in kraals over and above an allowance of two sheep per 10 head of stock. He quoted the case of the Ukamba Masai who had about 30,000 head of big stock in South Kavirondo district, whose population was about 5,000 souls and who paid taxes to all amounting to Rs. 1,000 only. He considered the Masai in the Naivasha District to be a glaring instance of the necessity of a revised form of taxation in connection with pastoral tribes.

Mr. Tate considered that a native livestock tax was justifiable because (1) the controlling hands in the hands of pastoralists was largely the result of the Pax Britannica, brought about by the expenditure of money on the part of the Home Government; and (2) costly experiments had been and were still being made on the benefit of stockowners in the Protectorate, part of the cost of which it was only fair to ask the native stockowners to contribute since they profited enormously by the results of these experiments. He considered that a tax of one per cent. per annum on all stock was the simplest and would be readily understood by the natives.

Mr. Hobley was in favour of the imposition of a stock tax on the Masai. He considered that there was nothing in the system of taxation they to have which affected the stockowners, who were the wealthiest natives in the Protectorate. There were members of persons belonging to the pastoral tribes on whom the incidence of the hut tax did not fall fairly, for though they often possessed many thousands of pounds worth of cattle and occupied vast areas of grazing land, they contributed only one or two huts and paid accordingly.

In February, 1913, Mr. Hemsted represented that the present form of taxation on the Masai was unsatisfactory and inadequate but he put forward certain objections to the imposition of a cattle tax. Such a tax would be difficult to assess, as the same owners usually kept their cattle in different villages. It would cause a great deal of dissatisfaction, as all natives disliked having their cattle counted; the revenue accruing would be subject to large fluctuations; and it would hardly be fair to impose such a tax only on the Masai.

He would prefer to see the introduction of a poll tax of Rs. 10 on each adult male, together with a further tax of Rs. 10 to be collected in instalments directly benefiting the Masai. Such a tax would be easier to collect and would tend to check the unauthorised movements of Masai. It would bring in some £8,000 to £9,000 annually.

In his reply, dated the 3rd of December, 1910, the Secretary of State observed that in the opinion the time had not yet arrived when it was either necessary or desirable to impose a cattle tax on the Masai which ought to be brought by them to be the object of a consequence of the Masai wars.

In a despatch to the Secretary of State, dated the 6th of March, 1911, the Governor remarked that a system of the present system of native taxation would no doubt be necessary in the near future, but he considered that this was not a matter of urgency and might profitably be held over until the reorganization of native administration had been effected. The Secretary of State agreed that the question might well be deferred.

On the 28th of July, 1911, Sir Henry Belfield wrote that he considered the time had come when a tax should be imposed on the cattle belonging to the pastoral tribes on the ground that the precautions taken by Government to prevent the spread of disease had enabled them to largely increase the number of their herds. He pointed out that the incidence of taxation should be such as to encourage agriculture and discourage pastoral predilection. He therefore appointed a Committee, consisting of Messrs. Hopcroft (Chairman), Orr-Ewing, C. F. Dundas and Dobbs-on, to consider the subject. Owing, however, to the outbreak of war, the sittings of the Committee were delayed and were in fact never held.

Mr. Hopcroft considered the question in December, 1911, and the first three months of 1912, and submitted a report on the general question of native taxation on the 30th of April, 1912. In that part of his report which deals with the Masai Reserve, he remarked that the Masai in the Masai Reserve possessed, as regards environment and location, a totally different problem from that encountered in considering the new young agricultural tribes in the Protectorate. The Masai were pastoralists, whose needs of life, customs and requirements differed from those of agricultural natives. They required much more land than agriculturists, and had many more inhabitants to the square mile.

Residents of the Masai Reserve estimated the population at 50,000 souls, the number of horned stock at 600,000 head, and of sheep and goats at 2,000,000 head, while the area of the reserve was approximately 4,000,000 acres. The annual rates paid by the Masai amounted to Rs. 40,000 only. Mr. Hopcroft quoted, in comparison, the case of three agricultural districts, whose total area was 2,000,000 acres, whose population was 600,000 souls, and which paid Rs. 600,000 in hut and gun tax.

The capitalized value of Masai stock was so large as to make the native worth about Rs. 600 per man, woman and child, and, supposing that the capital amount taxed was but 2 per cent. per annum, the annual average of the life would be worth Rs. 12 per head. The total personal wants were very small, while they paid less than one rupee each in annual taxes. It was therefore evident that the Masai did not contribute their fair share to the Protectorate revenue, and that some readjustment was necessary in their case.

In regard to the manner in which the Masai should be taxed, Mr. Hopcroft observed that their nomadic habits and mode of building long rendered the method of collecting revenue under a hut assessment a far more difficult matter than it was in the case of agricultural tribes. He also considered that any system of poll tax on able-bodied males would be equally unsatisfactory. He therefore proposed a scheme which had been put forward by Mr. Hopcroft and which he outlined as follows:—

In order to find out the approximate taxable value of the Masai, the tax should be worked out on a percentage, based on the assessed unimproved value of the land. The amount due would be collected in the form of a cattle tax (ignoring sheep and goats). The acreage of the reserve being some million acres, the unimproved value being assessed at Rs. 2 per acre, a tax of 1 per cent. on the unimproved value would produce a revenue of Rs. 200,000. This amount would be divided amongst the total number of cattle estimated, and would amount to Rs. [illegible] per head on half a million head of cattle. Mr. Hopcroft considered that there would be considerable difficulty in counting the cattle, and suggested

[illegible]

that assessment should take place every three years instead of annually. He inquired whether it was to be definitely laid down that the reserve valuation of [illegible] acres, and whether Mr. [illegible] per acre was reasonable on the average unimproved value of the land.

If any unreasonable objection were known to the introduction of a system which was on property tax, a graduated land or unit tax might be applied, based on a system of a tax on the unimproved value of land. His tax was that to be spread over the base of public, with a provision for a maximum tax per unit.

Mr. Harcourt

In the whole position of the Board, whose reserve [illegible] on Common Land within [illegible] of 500 miles, would have to be considered at the end of the war. Mr. Bonning recommended that they refer to [illegible] for the present, but he saw no objection to discussing the lines which such additional taxation would eventually take. He agreed generally to [illegible] the idea of a special tax on [illegible] property, but saw no necessity for [illegible] anything to the form of an unimproved land value tax. The only really satisfactory way of taxing the Board was to tax their [illegible], and he believed that the difficulty of [illegible] would be overcome. The system of a land value tax would save that the greater the number of the units, the smaller would be the incidence of the tax. He recommended that the principle of a small tax of so much per head of [illegible] and adopt to adapted for the Board.

Sir James Agnew, K.C.B., M.P.

Chief Justice [illegible] Solicitor [illegible] that the [illegible] of the reserve would, in all probability, require [illegible] and alteration from time to time, and that this would place the [illegible] of the tax, and would be a disturbing factor in a reserve which should be as simple and as little open to disturbance as possible.

Sir Henry Duffield

Sir Henry Duffield was convinced that the proper method of dealing with the Board was by imposing a tax on land, and did not think with [illegible] the suggestion of a land tax, which would practically be impossible and possibly oppressive in its incidence, and which would not be understood by the natives. It would, too, would be quite within their comprehension, and would not, he thought, be seriously opposed by the Board. It was really clear that it was collected in proportion to the [illegible] which administration had [illegible] on them, were [illegible] and [illegible].

Sir Gordon

Sir Gordon recommended to the Secretary of State the imposition of such a tax on the Board for consideration when the conditions of the people had been adjusted at the end of the war, on the grounds that they paid little or nothing in return for what was being done for them, and that the time was at hand when the differentiation which had hitherto existed in the treatment meted out to them, and to the other tribes should be reduced to comparative uniformity. The tax would be [illegible] without much difficulty upon the basis of a [illegible] value of land.

Mr. Harcourt

The Secretary of State concurred in the view that the Board should be left out of account for the present as regards additional taxation, and was disposed to agree that the imposition of a small tax would be the best way of dealing with the tribe. The matter could, however, be considered further after the conclusion of the war.

[illegible]

By Proclamation in the "Official Gazette" [illegible] and [illegible] tax in the Colonies Province was increased to Rs. 5, except in the case of certain areas. Inadvertently, the Board Reserve was not originally included, but though it was admitted that the Board could easily afford to pay the enhanced rate, it was decided that, until the general question had been considered, tax in the reserve should be collected at the rate of Rs. 3 as formerly. A Proclamation to this effect was signed on the [illegible] of July, 1914.

Mr. Harcourt

On the 3rd of July, 1914, Mr. Harcourt submitted a memorandum containing his proposals for the taxation of the Board. In this memorandum he represented that the Board Reserve was already stocked to its fullest capacity, and that, without the aid of improvements in the water supply, etc., no further appreciable

[illegible]

[illegible]

[illegible]

It seems doubtful if either of these courses can be pursued without exercising stronger measure than persuasion, for the latter has not been lacking in the past. The numbers of the tribe being so small, it would certainly appear to be feasible to compel the Masai to undertake agricultural labour for their subsistence, as such a step would be more in accordance with their traditions than many others. There also seems to be no reason why these people (including Akikuyu) who wish to exercise their talents in the occupation of the African mounted constabulary from other tribes. Herdsmen are of essential service to every farming community, and here among the Masai can be drawn some of the best herdsmen in the world.

Development of Native Reserves

The experience for rounding organization, and utilization which the Masai have enjoyed in the past has also led to consideration of the possibility of utilizing these people under modern conditions, by enrolling a number of Masai in the King's African Rifles and Police. Experiments have been tried in this connection but there has always been, with the same individual exceptions they have proved unsuccessful. One or two Masai who have succeeded in passing the necessary tests have developed into reliable and efficient soldiers and policemen, but, in spite of repeated trials, the vast majority, discharged as unlikely or as desiring have found their way back to the reserve and reverted to much their former and native manner. Such unlearning and thereafter appears to the Masai to be too nearly akin to work to be acceptable to them, and they adopt from the first an attitude of passive resistance and indifference, the most opposite to that necessary which is essential to successful development. We would have found these experiments and the consequent unsettling influence which is now being added to, apparently with the consent and approval of the elders of the tribe, but we can see little sign of any improvement in the attitude. It remains to be seen, however, whether the proposed attempt to break down the barrier of conservatism and drive will be made as to induce the Masai to take part, as a matter of pride in their ability to do so, in a branch of military for which their undoubted fighting record appears admirably to suit them.

Masai Agricultural Policy

The endowment of the Masai Reserve as landowners or as tenants, seems to be the only obvious method by which they can be called on to demonstrate their qualities as to seek to the more valuable land they occupy, and provided that sufficient development can be promoted under the owners, a sound possibility for land policy is based on valuable income by any of the other classes of Masai under. It remains to consider what may be the best means of utilizing their services within the confines of the reserve and this question is closely connected with the possibilities of the Masai population.

Masai Stock

The wealth of the Masai is entirely invested in stock, and is said to consist of the colossal figures of 700,000 head of cattle, more than 2,000,000 sheep and goats, and 10,000 donkeys. The stock is concentrated in a reserve of some 5,000 square miles in extent, of which part is waterless and unfit for stock, and of which part is reserved by the Masai as essentially for cattle owing to a complete lack of tsetse. These very actual and problematical disabilities combine to make the stock-carrying capacity of the reserve but little in excess of what it carries at present, and it is maintained that, without the provision of veterinary facilities, and without the undertaking of public works towards the better distribution of the water, the reserve is now as full that the annual deaths are equal to the annual increase, or in other words, that the amount of stock owned by the Masai is now stationary.

Veterinary Aids

In any reality be imagined, the problem of providing veterinary facilities for these vast herds presents such difficulties on account of the magnitude that very considerable increase would be necessary in the Veterinary Field Staff before anything like adequate attempts could be undertaken. This has been the main difficulty in the past, and must remain so at any rate until the question of new conditions enables the Government to augment the Veterinary Department by the addition of other qualified officers. Money has been voted in the Estimates for the financial year 1938-1939 for a commencement to a comprehensive scheme of veterinary research in the Protectorate, and these proposed activities affect the Masai Reserve in many ways. A dipping scheme is to be introduced which will,

It is hoped, in time, as also the conditions in the Kenya Reserve as to water
[illegible]
[illegible]
[illegible]

essential problem before the Government at the present time is dealing with the Masai is how to turn this annual increase into a realizable asset. The proposals for imposing upon the Masai a tax of two rupees per head of cattle per annum, approved by the Governor in January, 1914, fell through mainly owing to the impossibility of procuring a market for the quantities of almost worthless stock that would have been produced in payment and it is difficult to see how the objection is to be overcome unless some such means of marketing is produced. Purchase by local auctions and farms of the kind of stock that would come to us as a result of the imposition of such a tax would in all probability be very limited in extent, and no business firm has yet come forward with proposals for selling even such stock for canning or export to other markets. It has not yet been proved or disproved that such Masai stock is marketable for the purposes of human consumption, but it is a fact that most of the stock from the Masai Reserve purchased for slaughter by the military authorities was rejected as unsuitable, and while it is commonly improbable that the Masai would be able to put their tax in cash, it is only reasonable to expect that the worst stock would be paid in the form of cash others that was marketable.

The problem, therefore, appears to be as follows. If the necessary staff is provided, a tax can be collected from the Masai at the rate approved which will bring in about [illegible] annually. If the money collected [illegible] is to be devoted to works in the Masai Reserve which will so improve the conditions therein as will not only render it capable of maintaining a larger number of stock, but will also so alter the conditions as to make it probable that a higher grade of cattle could be supported in the reserve. When this last step has become effective it may reasonably be assumed that a surplus will be forthcoming for the cattle paid to us as a tax, but it is not yet proved that it will be possible to realize the value of the stock collected in the earlier years. A trial alone can demonstrate this.

Enough may now have been said on the subject of the possibilities of the reserve, but it must also be borne in mind that, at the present cattle tax, one half of the proceeds are to be paid into the general revenue of the Protectorate and that it is a matter of concern not only to the reserve, but to the Protectorate as a whole that the proceeds of the tax should be forthcoming in the shape of a realized asset as soon an opportunity occurs. The Masai have hitherto paid a hut tax at the rate of three rupees per hut, which now, amounting to [illegible] per annum, has not covered the cost of their administration, but the proposed tax will not only cover the cost of the administration of the reserve, but will have a considerable balance for the general development of the Protectorate, while the needs of the Masai Reserve can be attended to to the fullest extent of which the staff is capable.

Of the Masai residing within the reserve, the most that can be expected of those who are not herding cattle is that they will help in the performance of the public works which are necessary to be undertaken therein. Hitherto they have not been employed on such works as manual labour does not appeal to them, and it is indeed doubtful if such a change will be brought about in their temperament as to induce them to perform this. That the position may not be hopeless is perhaps suggested by the fact that certain sections of the Kwavi tribe who had until recently maintained an attitude similar to that adopted by the Masai, commenced manual labour last year, and a corresponding change on the latter may well occur among the Masai.

Conditions have so greatly altered in the Masai Reserve during the last few years that the power of the medicine-men as a class has greatly decreased. The measures on education on the Masai may further enlighten them, may undermine their superstitions, and may encourage them to discard their perquisites. An organized movement to show the Masai the development that is going on around them and to drive home to them the fact that unless they progress they are bound to disappear in the circumstances attendant on the introduction of civilization may help its effect in eventually bringing them to a conception of their duty. The Masai problem has not yet been tackled, but the prospect of rendering them useful citizens of the Empire is not entirely without hope.

His Excellency accompanied the patrol which left Kumasi on June 18th, and joined that and other parts of their plan. A few did not descend South with Kumasi, but there was no trace of the fighting, and the patrol returned to Kumasi on June 23rd. Information was then received of the presence of parties of rebels forty miles west of Kumasi Fort, and the patrol proceeded towards the Lowgah Mountains on June 24th. According to the Deputy Commissioner and Lieut. Cramer, the patrol entered the Southern country at the beginning of July, having found only one village of Obuasi, which was taken in possession for transfer to the Southern Head Quarters. Proceeding along the Cape Coast road, then to a southerly direction, the patrol reached Obuasi Northern outskirts on the 10th of July, and there returned by way of the Lowgahs Hills to Kumasi, arriving eight days later. All cattle belonging to the Northern living on the Cape Coast, as well as those of the Kumasi people, were examined without result.

Sufficient information was forthcoming, however, to establish the fact that the Chiefs were the chief perpetrators of the deeds, and that the stolen cattle had been taken to the Southern Country, and certain animals, identified as having been among those stolen or taken from, were subsequently recovered from that country. The evidence was not sufficient to warrant the conviction of any individuals, but served to prove the complicity of the 3 Kumasi Chiefs of the Cape Coast, who withheld all information which might have incriminated the guilty parties, and offered no help in the tracing of the offenders. On this understanding, and also in view of their having made no effort to assist in the recapture of certain slaves who had escaped from captivity into their country, a fine of one thousand head of cattle was, in January, 1911, imposed on these Chiefs, under the Collective Punishments Ordinance. This fine had been collected in full by June, 1911, and compensation having been paid in respect of claims for stolen stock, the remainder of the proceeds were devoted to the construction of a waggon road from Kibbi to Abora Bridge, to join up with the road in process of construction from Abora to Prah.

(2) In June and July, 1911, His Excellency, Sir Frederic Hodgson, made an extended tour through the western half of the Ahanta District, accompanied by the Provincial Commissioner, Kumasi, the Cape Coast and Lt. J. Hunt-Pickard. Starting from Kumasi on June 21st, he held a meeting at Tarkwa on June 26th, when local affairs were discussed with the Tarkwa Chief, and the principal local Elders. Leaving Tarkwa on June 28th, His Excellency travelled via Axim to the Cape Three Points, which he crossed at Cape de Venne's Point, and there proceeded to the Ramseyer. He left that camp on July 6th, crossed the Lotty Plains at Dagwin Town, and proceeded northwards to select a site for the administrative centre of the district. (Vide Secretary No. 99). From Dunkwa he moved west across the northern portion of the Lotty Plains, and reached Axim on July 10th. There he met Mr. C. C. Wigle, who was carrying out a scheme of water conservation in the Lower Valley, and on the next day he proceeded to the Ahia River Post. On July 20th, he held a meeting at Ahia Bridge with the Ahia chiefs from the western part of the country, among whom was Lagebiba, the "Ahia Chief" who at that time before the Courts and Legislative proved somewhat truculent, but he appeared to have only a small following among the other chiefs in his attitude of passive resistance. Leaving the Ahia River, Sir Percy Sillitoe crossed the northern edge of the Cheapchapo Forest, and reached the boundary of the country on Cologale on August 1st.

(3) In the course of his meeting with the Ahia Rivers at Tarkwa on the 26th of June, the Governor was approached with a request that a ferry might be provided at that place for the use of the Ahia people. His Excellency replied that he was disposed to approve the construction of such a ferry, but he made it clear to the Ahia that, although the Government was prepared to bear the cost of certain works of improvement in order to render the country suitable to their needs, they were not to expect that such work would always be carried out free of cost to the people. The words His Excellency in response to this request was opened at Tarkwa in April, 1914, by the Chief Secretary Officer, who explained the process to Chief Agyeman and a number of Ahia who were present. The boatmen and they cattle were ferried that day. The construction of the ferry

[illegible]

[illegible] Governor was found to be guilty, and it may not avail him that he was guilty of the act. For a month or two the Rhine flowed down with unprecedented force, so it was impossible to execute effective improvements. This failed to appreciate the advantages of the enclosure and, finding that their work continued in the dry season, they refused to aid it.

A military force from Fort Ingall was formed at Spring during afternoons and the City was taken over by the Provisional Superintendent. Owing to the presence of large numbers of military units, the majority of Rhine works left unaffected.

In June, 1915, the City was again available for the Rhine, and two villages were reported to make regular use of it.

[illegible] By June 1915 [illegible]

(i) While at Spring, on June 20th, 1915, the Governor was asked that arrangements might be made for the opening of a branch of the Commercial Savings Bank at that place. Such a branch was established on September 20th, nineteen pensions being opened on that day, and a total amount of Rs. 200 being deposited.

[illegible]

(ii) The selection of the site for the headquarters of the administration of the Rhine Enclave was made by the Rhine Exhibit, in July, 1915, during the visit through the Rhine Enclave. The site is on the Rhine River, at an altitude of 4,000 feet above sea level, and consists of an extensive elevated plateau, the edge of which is some fifty feet immediately above the stream. Field Artillery on to the permanent occupation of the site was followed until sufficient time had elapsed to allow its suitability from all points of view, but temporary buildings have at once erected for the occupation of the administrative staff, and the Governor took up residence there in October, 1915.

[illegible] (iii) In October 1915, a party of armed men from German East Africa raided a village of the Lulu Rhine, in a locality known as El Kaja Area, killing one Rhine and removing a quantity of live-stock. The village in question was situated near the Anglo-German frontier, and the armed men were pursued by an German police. Representations were accordingly made to the German Government, who deputed Lieutenant von Thiggelin to meet Mr. Howard and discuss the incident. The meeting took place at Bwandjwe Post No. 10, on the 20th of February, 1916, when Lieutenant von Thiggelin admitted that the outlaws were German police, but contended that the Rhine village was situated in German territory. As the method of demarcating the boundary between Lulu Rhine and the Rhine River was merely by natural, situated several miles apart, the exact position of the boundary was a matter of doubt, and these two officers accordingly agreed to share the work of some definite demarcation by cutting a road one foot broad over this part. While some time, representations have made to the German authorities that the presence on the border of unarmed armed native police constituted a danger to peace and good order, and was likely to lead to trouble, in regard to the incident in question, both Governments agreed that the removal of all the stock in the village appeared to be a severe punishment for the infringement of boundary regulations, and the German Government promised to attend to the matter. The proceeds of the sale of the impounded stock. This amounted to Rs. 1,710.00, after defraying expenses, but the books and [illegible] payment had been made, and on August 30th, 1916, the Governor-in-Council decided that this amount should be paid to the Rhine, as a set-off against the Rs 5,000, which was being received as compensation for Rhine Enemy. (File Enclosure No. 4).

[illegible] (iv) On January 22nd, 1916, about 100 head of cattle, sheep and goats were brought from the location of the Chagga Chief, Sameny, to a well-[illegible] on the British side of the border where they were intercepted by two Rhine of the Rhine Southern Enclave, who collected them with the avowed intention of handing them over to the Government. In consequence of this act, large numbers of armed Wachagga, accompanied by two German police, entered the border to prevent of the stock and raided the village of a Rhine Rhine situated close to the well-[illegible]. The Rhine had had no knowledge of their approach but he was pursued and three of his party were killed, three women seriously injured, and stock numbering 600 head of cattle and 1,000 sheep and goats were driven off into

The matter was discussed in Executive Council on the 23rd of June, 1971, when Mr. Bongwele, who was present, stated that there could be no doubt that the assistance of Chief [illegible] were not aware of the identity of the assailants and were deliberately shielding their true leaders. Several members of Council had recently attended a meeting with the Chief Minister, and an atmosphere of [illegible] was established accordingly. A few of the Chiefs were accordingly questioned on each of the three [illegible] the most they anticipated in the matter. The Secretary of State instructed the Governor to respond, on the 22nd of August, 1971, three provisional [illegible] each of which would be binding on anybody for the period of the War, but to [illegible] the process of the War had been made to each. Agreements were, therefore, issued but to the Governor in Chief, to the end of the [illegible] to which the [illegible] of the Chiefs in which the process of the War happened. This was the [illegible] ending to an extension of [illegible] among the Chiefs.

[illegible] Government [illegible] [illegible] [illegible]

48. Owing to complaints by the Chief of the Ayongo Chiefs to their chiefs for [illegible], and in defiance of several [illegible] whose authority had been [illegible] by these Chiefs, proceedings were [illegible] in December, 1970, by [illegible] Officers [illegible] in the Chief Minister, to [illegible] the Ayongo Chiefs, to whom there was good reason to believe that the [illegible] were dangerous.

[illegible] [illegible] [illegible] [illegible] [illegible]

49. Owing to the [illegible] [illegible] for the Subscription Board on the [illegible] by the Ayongo Chiefs, that [illegible] was issued to [illegible] Chief, and was issued to the property of the Ayongo Chiefs, on some which had, for some time, been practically [illegible].

[illegible] [illegible]

50. The Subscription [illegible] were highly susceptible to East Coast fever. A [illegible] succeeded in [illegible] a cattle [illegible] to [illegible] [illegible] [illegible] during [illegible] [illegible] [illegible]

Prior to the meeting Mr. Sells stated the Crow Creek Sioux Indians and several of the adjoining bands had objected to the following boundaries of Crow Creek Reserve as they now contained in all between 1,000 and 1,200 acres of good tillable land. They proposed to add land on the north and west sides of the present reserve, which would include about 1,000 acres of good tillable land, in exchange for which they would be willing to relinquish to Captain Rogers, who received title to Indians as follows: 1 per cent, per annum. There were 30 heads on Lord Strathcona's land, comprising 2,000 head of cattle, which were allowed this privilege without payment. The remaining 1,000 or 1,200 cattle were for the most part in the Calvin District.

The two reserves occupied by the Crow Creek Band in February, 1911, were separated by a strip of unsurveyed land, and steps were taken to re-survey parts of adjacent lands belonging to Captain Rogers which would join these two areas and form one native district having an area of some 40,000 acres. The Band were informed that, when this matter had been attended to, they could report the opinions of themselves as individuals desired. They were also given to understand that, in lieu of land now held, they would be required to pay a rental not of $1 per head or a share not of one head out of every head of the cattle, sheep or goats.

In July, 1911, the Provincial Commissioner, Portage, reported that the relations had remained between Chief Lonbear and the Lonbear Indians, Wabowash, Indian Agent in the Rossi Reserve. Lonbear had been commissioned Chief by Mr. Jones the Portage's Inspector when he was employed at Portage and had exercised a considerable influence. Charges of misconduct had been brought against Wabowash, and the result was the appointment of Lonbear to Rossi, while the other Band, from Lonbear into the Portage's Band Reserve. The following expressed a desire to accompany him. It appeared however, that such a movement would be the cause of trouble between the Crow Creek and the other Band, who have little in common, and it was decided to hold the matter over, at any rate until the Rossi Band was an amalgamated unit.

In May, 1912, the sanction of the Secretary of State was requested to an exchange of land held by Captain Rogers in the Portage Province for an area in the Lake Plains. Captain Rogers was willing to exchange 10,000 acres, to be used for an extension of the Crow Creek Band Reserve, for 20,000 acres on the Lake Plains. The Secretary of State approved the arrangement in June, 1912, and the Provincial Commissioner, Portage, was instructed to take steps to mark out the extended Crow Creek Band Reserve.

A description of the Crow Creek Sioux Indian Reserve was accordingly drawn up, and read as follows:—

"The reserve is divided into three parts:

"No. 1. Commencing at the point where the Dakota Eastern Railway crosses the Esquimaux (or Eastern) River the boundary follows the right bank of the river down stream to the junction with the Esquai (or Esquai) River; thence along the left bank of the Esquai River up stream to the point where it is crossed by the Dakota Eastern Railway; thence along this road to the direction of Dakota Section to the point of commencement.

"No. 2. Commencing at the point where the Esquai River is crossed by the Dakota Eastern Railway the boundary follows that road in the direction of Dakota to the most northerly corner of portion L.O. 407; thence in south-easterly direction along the eastern boundary of L.O. 407 to its intersection with the eastern boundary of L.O. 408; thence southerly and easterly along the eastern and northern boundaries of portion L.O. 408 to the Esquai River; thence along the right bank of the Esquai River down stream to the point of commencement.

"No. 3. Commencing at the most westerly corner of portion L.O. No. 408 on the Dakota Eastern Road the boundary follows the western boundaries of L.O. 408, 409, 410, 411 in a north-easterly direction to the most westerly corner of the latter (which is also the western corner of L.O. 412); thence in a south-easterly direction along the northern boundary of L.O. 412 to the Esquai River;

[illegible]

162
331
634

(4) VITAL STATISTICS AND NATIVE AUTHORITY.

(a) Population.

The latest statistics of population, given in March, 1917, are as follows:—

Location No.	Name of Division.	Population.	Morans.	Cattle.	Sheep.	Donkeys.
1	Shin	1,200	80	12,000	25,000	80
2	Lolte	5,000	700	80,000	225,000	750
	Sakai	600	80	6,000	15,000	100
	L'Otuyok	800	80	7,000	18,000	100
3	Purko	16,800	2,200	375,000	1,000,000	8,200
	Il Dumat	900	65	8,000	20,000	100
4	Kakuyukye	2,800	280	30,000	200,000	2,000
5	L'Odo Kilani	1,200	80	10,000	30,000	150
	Ngorumun	400	40	1,000	10,000	80
6	Matapato	2,400	140	40,000	175,000	300
7	Sighirari (Engidongi)	1,800	120	28,000	80,000	200
	Il Dais Lokutuk	700	75	6,000	20,000	75
8	Kapuiai	2,600	175	30,000	100,000	400
9	Sighirari (Loitokitok)	2,800	150	60,000	175,000	300
	Wandorobo	2,500	200	2,000	5,000	25
	TOTAL	42,800.	4,535	718,000	2,086,000	10,300

4: Sandford C-4, 5 (1919) 1919 FL12 Masai FL12

6:Thomson K-3 (1883-1884)1887
FL12 Masai FL12

arm. A beaded belt confines it round the waist, leaving only one limb partly exposed. Frequently it is slipped off the shoulder, and depends entirely from the waist, leaving the bosom exposed. Their ornaments are of a very remarkable nature. Round the legs from the ankles to the knees telegraph wire is coiled closely in spiral fashion. So awkward is this ornament that the wearer cannot walk properly, she cannot sit down or rise up like any other human being, and she cannot run. Round the arms she has wire similarly coiled both above and below the elbow. Round the neck more iron wire is coiled—in this case, however, horizontally—till the head seems to sit on an inverted iron salver. When the leg-ornaments are once on they must remain till finally taken off, as it requires many days of painful work to fit them into their places. They chafe the ankles excessively, and evidently give much pain. As they are put on when very young, the calf is not allowed to develop, and the consequence is, that when grown up the legs remain at a uniform thickness from ankle to knee—mere animated stilts, in fact. The weight of this armour varies according to the wealth of the parties, up to thirty pounds. Besides the iron wire, great quantities of beads and iron chains are disposed in various ways round the neck.

Such, then, were the people that now greeted Moran, who, being a novice, had to suffer a good deal of chaff from both sexes. He was, however, soon initiated into the mysteries of a warrior kraal, and had seen a bit of life. The strictest diet imaginable was the rule. He had to be content with absolutely nothing but meat and milk. Tobacco or snuff, beer or spirits, vegetable food of all kinds, even the flesh of all animals except cattle, sheep, and goats, were alike eschewed. To eat any of those articles was to be degraded—to lose caste; to be offered them was to be insulted in the deepest manner. As if these rules were not strict enough, he must needs not be seen eating meat in the kraal, neither must he take it along with milk. So many days were devoted entirely to the drinking of new milk, and then, when carnivorous longings came over him, he had to retire with a bullock to a lonely place in the forest, accompanied by some of his comrades, and a Ditto to act as cook. Having scrupulously made certain that there was no trace of milk left on their stomachs by partaking of an extremely powerful purgative, they killed the bullock either with a blow from a rungu or by stabbing it in the back of the neck. They then

6: Thomson K-3 (1883-1884)1887
FL12 Masai FL12

776 In connection with the decided belief of the Masai in a God, it may be noted that they have also some minor deity called Neiterkob—apparently, as far as I could learn, an [754] earth spirit. They have faith in witchcraft, though the efficacy of the lybon, or medicine-man, lies not in any innate ability of his own, but in his power of intercession with Ngăi, who works through him, and imparts magical virtues to various objects. Their conception of the Deity seems to be marvellously vague. I was Ngăi. My lamp was Ngăi. Ngăi was in the steaming holes. His house was in the eternal snows of Kilimanjaro. In fact, whatever struck them as strange or incomprehensible, that they at once assumed had [782] some connection with Ngăi. Their prayers to him were incessant. Nothing could be done without hours of howling, whether it was to seek direction where to slaughter their 824 enemies, or to ward off a disease. The most sacred thing among 778 them is the grass. Held in the hand, or tied in a sprig to the dress, it is a sign of welcome and peace. Thrown at any one, or into some mysterious place, it is an invocation for a blessing on the person, or a propitiatory offering. Next to the 772 grass comes the milk. No liberties may be taken with it. 778 The milk must be drawn into calabashes specially reserved for its reception, into which water is not allowed to enter—*cleanliness* being ensured by woodashes. To boil it is a heinous offence, and would be accounted a sufficient reason for massacring a caravan. It is believed that the cattle would [231] cease to give milk. The cows, it may be remarked, are never milked except in the dark.

835 Moran found married life sadly dull after his warrior experiences, and to kill time he accompanied one or two war-parties. But that was exceptional. His time henceforward was chiefly occupied in eternal and interminable discussions on the most trivial questions, or wandering long distances on visits to his friends, while his wife stayed at home to milk the cattle, or occasionally made journeys to neighbouring hostile tribes to buy grain. She, however, was in her element when a caravan came round, and then she enjoyed the double pleasure of an intrigue and a lovely present of iron wire and beads.

595 In time Moran's first wife became old and ugly, and he took to himself a second—the former being stripped of all her iron wire for the purpose of decking the new comer. At last the 764 day closed for both of them, and one after the other, they formed the subject of horrible hyenas' laughter. These fierce

As only those candidates who belong to a given village may be operated on in that village, it is seldom that there is more than one circumcised at a time, but should there be two or three candidates belonging to a single village they would be circumcised together on the same day at the same time. There is no elaborate ceremonial accompanying the operation or preparatory to it. A boy will continue herding his cattle until the late afternoon of the day before that fixed for his circumcision. He is then fetched back to the village and has his hair shaved off by his mother, and has new sandals and a new skin dress given to him. This dress must be made of the skins of four rams sewn together, and will be worn the following day during the operation. The actual operation takes place next day, either early in the morning or in the middle of the day. If it is in the morning, the cattle are kept in the yard until the ceremony is over, but if it is in the middle of the day the cattle must be brought into the yard and kept there during the ceremony, for it is absolutely essential that the cattle shall be in their enclosure during the whole of the ceremony. Sheep and goats are not included in this rule. The boy (or boys) sits on an ox-skin in the courtyard in front of his mother's hut wearing his new ram-skin dress and sandals, and the operator performs the operation with a special small knife without any elaborate ceremonial. The boy then retires to his hut to convalesce. A fat ram is killed for the patient, who is fed on meat boiled in fat and on plain cold fat, "so that he may get well quickly." After about five or six days the other boys in the district who have already been circumcised and have recovered, call for the boy, and he joins their band for the period of their novitiate.

The Novitiate.—The period of novicehood varies in length of time, as a boy must remain in the novice stage from the time that he is circumcised until every other candidate has been circumcised too. Usually a period of about two years elapses between the time of the bull-seizing ceremony and the time when the last candidate has been operated upon. Then the group undergoes the hair-shaving ceremony which marks their transfer from the novice stage to the warrior stage; thus, the last few to be circumcised may only have a few weeks in the novice stage, while others may be about two years in that stage. During the novitiate, there are certain rules and regulations which must be observed by the novices. They wander about the country in bands armed with bows and bird-arrows visiting more especially those villages where they hear that fresh candidates have just been circumcised, and enlisting them in their groups. During the whole novitiate period the novices must not cut their hair at all, nor may they indulge in any form of sexual intercourse, nor may they use red ochre, but only plain fat on their bodies. They are required to shoot as many birds as they can, and to skin them and stuff them roughly with grass, and tie them to their hair as a decoration. More and more skins are added to this head-dress as the weeks go by, until at length a boy has a complete wig of stuffed bird skins. Certain birds must on no account be so used, notably birds such as pigeons, doves, and

11: Leakey E-5 (no date) 1930 FL12 Masai FL12
Kenya

233 villages the shields are removed to allow mating to take place with the owner's
232 own cows. The same method of preventing mating is used with rams, but to a much lesser extent. If a man has several good rams he keeps shields on a few of them at a time in order to use his rams in rotation.

233 *Blood-letting.*—Among the Masai, blood is a staple article of diet. It is either
[262] drunk hot and fresh, or cooked with bits of fat and meat into a "black-pudding," or else mixed with fresh milk and allowed to curdle.

In order to obtain blood every sheep and every head of cattle is bled at intervals. Cattle are bled by one method and sheep by another. In the case of cattle, the animal is seized and held, and a thong is then tied round its neck until the vein at the side of the neck swells up under the pressure of the blood. The vein is then
[413] punctured by means of a special instrument which may be termed a "blood-letting arrow." The blood-letting arrow consists of a small stocky shaft into the end of which a *small* flat blade is inserted. This blade has a curved edge and is very sharp. This arrow is used with a special bow which is always small and usually very roughly made. The arrow is not shot from a distance, but *placed against* the swollen vein. The bow string is only pulled back very slightly and when released drives the arrow just far
[415] enough to open the vein. The blood is caught in a gourd and the animal released.

Sheep are bled by a different method; the animal is held and a small incision is made just above one eye and blood drawn off.

262 *Meat-feasts.*—Young men and old alike indulge in frequent meat-feasts, meat
527 being a staple article of diet. No men may eat meat inside the villages, so meat-feasts take place either in special huts built at a little distance from the villages, or in a cave if there is one near-by.

There are certain rules and regulations concerning meat-feasts, as follows:—

(1) No man may eat meat that has been touched by a woman.

[231] (2) No Masai man may slaughter cattle himself. In every case a man of the
[563] Wandorobo tribe must be called in to kill the animal, and he must be rewarded by being given a part of a foreleg.

(3) The neck, stomach and some of the intestines are always given to the women, who may come and fetch them. The breast must be given to the man to whom the slaughtered animal belonged.

(4) During a meat-feast, some at least of the feasters must sleep in the hut or cave where the meat is, and it is usual for all to do so. If by any chance the fire should go right out in the course of the night, it would be considered a very serious matter indeed. In such a case no one inside the hut may go out by the normal entrance, but must break through the walls (in the case of a cave they must break through the brushwood screen which is invariably built across part of the entrance to the mouth of the cave), and all the meat that is left over must be deserted and left to the hyenas. The breaking of this rule is said to result invariably in the death of the miscreant.

13:Huntingford E-4 (no date) 1953 FL12 Masai FL12

The 1948 census gives the following figures:

		Male	Female	Total
Kenya	Narok	17,055	17,755	34,810
	Kajiado	12,553	12,925	25,478
	Sambur	9,800*	10,200*	20,000*
	Il-Tiamus	1,734	1,689	3,423
		41,142	42,569	83,711

* Estimated.

		Male	Female	Total
Tanganyika Districts	Arusha	24,710	27,310	52,020
	Masai	23,271	24,005	47,276
	Mpwapwa	728	740	1,468
	Handeni	435	537	972
	Pare	826	747	1,573
		49,970	53,339	103,309
Total for Masailand		91,112	95,908	187,020

This shows only a small increase over the 1941 estimate for the Kenya Masai, when 10,000 Sambur are deducted; but it doubles the previous estimate for the Sambur and shows a substantial increase in the Tanganyika Masai.

The livestock estimates for the Kenya Masai are:

	Cattle	Goats and sheep	Donkeys
1919	750,000	2,000,000	10,000
1930	700,000 to 1,000,000	1,000,000	170,000

The figures for cattle among the Tanganyika Masai are 500,000,[3] but these may be underestimated. They vary in fact from about 600,000 to 750,000 according to season and other factors.[4]

The total area of Masailand in Kenya and Tanganyika is about 41,000 square miles or 26,240,000 acres (15,000 square miles or 9,600,000 acres in Kenya, and 26,000 square miles or 16,640,000 acres in Tanganyika). After deducting 3,000 square miles or 2,000,000 acres from the Kenya Land Unit as being useless on account of bush or tsetse fly, the Kenya Masai have about three acres per head of stock which is shared with sheep and goats; whereas in country such as theirs cattle alone require anything from three to five acres per head, owing to the low rainfall, poor grazing, scarcity of rivers, and frequent droughts. Their Land Unit is also a Game Reserve.

SOURCES: Sandford, 1919; E.A. Census, 1948.

PHYSICAL ENVIRONMENT

At the height of their power in the middle of the 19th century the Masai occupied a stretch of country which covered some 500 miles from north to south, and, at its widest, 150 miles from east to west. The northern limit was approximately Lake Sukuta (now mud flats), 20 miles south of Lake Rudolf; the southern, Lenjoge, near

[3] F. H. Page-Jones, "Water in Masailand," *TNR*, 1948, p. 51.
[4] Information from Mr. H. A. Fosbrooke.

• 231	613
233	614
262	643
304	721
411	754
524	759
564	802
595	805

[For mythological accounts of the origin of:

livestock and dogs	see category 539, p. 359
honey as a source of food	360
board game	361
club carved of wood	362
blood as a source of food	362
blacksmiths	364
clans and lineages	368-369
counting and number words	370
7-day week	376
polygamy	377
ol oiboni and chief	377
circumcision	382
double-edged knife	382
sorcerers	382
physicians	382
mandate for war on non- Masai	382-383.]

/7 cont./

000 against the former. The El kuafi recognized the chief (ol oiboni)
174 of the Masai as also their own and seem for a long time to have
184 been on the best of terms with them. Then -- so the tradition
669 tells -- a girl named Matangó, from the family of the ol oiboni
619 Sitonik -- she is usually designated as his sister, more rarely as
726 his aunt -- took a fancy to a member of a legation of El kuafi
[73] warriors sent to Sitonik and went away with her lover. When she bore him a son, the El kuafi proclaimed him their ol oiboni and at the same time refused to obey Sitonik. With this the wars began between Masai and El kuafi. They lasted -- so it seems -- the entire first half of the nineteenth century and occurred sporadically even in the second half of it. One of the decisive battles was at Kisongo, a six-hour march west of Meruberg /Mt. Meru/, where later on the chiefs of the Masai took up their permanent /8/ residence. The ones driven away went into the rugged forests of
[466] Meruberg, where they lived for a long time in constant strife with the Masai, until the chief Mbatyan completely subjugated them and forced them into compulsory service. Other battles took place near Ngurumán, north of Lake Natron; the rest of those conquered still live there, mixed with Wasegedju from nearby Sonjo. The
[361] remnants of the ones defeated in the Serengeti steppe are still to be found in Taveta, Kahe, Aruscha-tschini. The first battles between Masai and El kuafi probably took place in the vicinity of Kenia /Mt. Kenya/, and led to making the latter sedentary.

One of the last great clashes was in the steppe area Sogonoi; the ones conquered fled to Ngujuka and then farther to Useguha and Mahga, where they founded a settlement under the chief 'Lemá.

174 The Masai took a few individuals from among the defeated
184 into their community. The rest split up. One -- larger -- part
619 became sedentary and formed some colonies in the vicinity of
[361] foreign tribes or merged with other tribes. Another -- smaller --
[721] part at first made a living for a time from hunting, until it
[231] succeeded, by means of raids against sedentary peoples, in coming into the possession of livestock again. Today they again live
[101] wholly as before and are distinguished from the Masai only by

M 192 101 /9 cont./ in that it was taken as a tribal name, and people spoke of ol oikob-Masai and ol oikob-Wakuafi. El oikob (sing. ol oikobani) means killers, rough, brutal persons, and is an invective with which the Wandoróbo, Wakuafi, and the Masai blacksmiths (el konono) designate their oppressors, the Masai. Fischer mistakenly translates the word as "owners of the land"; this, however, would be called: ol opén l eń gob.

M 619 184 181 The Wakuafi live in their colonies as more or less peaceful, sedentary cultivators. Wherever they found peaceful neighbors after their defeats, they too became calm. On the other hand, where they remained in close contact with the Masai and were exposed to their constant raids, the old bellicosity remained in them. An example of this is the population of Meruberg /Mt. Meru/ in the Great Aruscha /Arusha/ and Meru areas. In spite of a very considerable mixture with Wadschagga from nearby Kilimandscharo, they have completely kept their original character traits. Their imperiousness, rapacity, and cunning equal that of the Masai; in courage, on the other hand, they even surpass them. Their numerous attacks on the camps of Europeans and trade caravans reveal them as brigands. The relationship between Wakuafi and Masai is in general not bad. The latter regard the former as fellow tribesmen, even though as inferior ones, because they work the soil and own only a little livestock. They are foes one minute and friends the next! And both must always reconcile themselves to each other, for the Masai cannot do without them as suppliers of vegetable foods, after the rinderpest at the end of the eighties again raged so destructively among their herds.

M [144] M [648] M 829 619 [241] [231] [438] [731]

D 105 While among the Wakuafi one can still clearly recognize their one-time power and greatness, this is no longer the case at all among the Asá. Most of them, just like the El asiti, timidly and concealed in the bush of the steppes, live in miserable little grass and leaf huts which can be reached only by hidden paths. Their food consists of game, which they kill with poisoned arrows and poisoned javelins, honey, agricultural products which they obtain in barter, various wild berries, roots, and herbs. Where they dwell in the vicinity of the Masai, they live in a certain

/33 cont./

462
351
516

C. G. Schillings phot.

Ill. 13. Women cleaning the kraal.

262 Albizzia anthelmintica) always used in the cooking of meat is
272 supposed to cause severe diarrhea. Therefore milk that is offered
[153] is often refused in the hope that a meal of meat will be obtained
[263] on the same day. One who wishes to partake of both foods in one day -- and where is there a Masai who could resist an invitation to a meal of meat?! -- vomits first before eating the meat, for which he produces the necessary stimulus by means of a blade of grass stuck in the throat. If one has eaten cooked meat today, then /34/ one first drinks some blood in the morning before the milk, not out of considerations of health, but rather because it is believed that the livestock would give less milk as a consequence
• [231] of neglecting this custom. Bringing milk into contact with meat is most scrupulously avoided, because, according to the general view, through that the udder of the cow from whom that milk came would become permanently diseased. For this reason the

/61 cont./

881 question for the next circumcision period. These choose for this, as the site of the festival, a recently built family kraal, which is [292] then designated as eŋg aŋ 'n aibage 'l aijok. Decked out with a [535] costume in imitation of the warriors, but without weapons and, in- [533] stead, a long stick in the right hand, the boys amuse themselves with dance and song in the vicinity of the kraal. When they crowd into the kraal after the first dance, in order to moisten their parched throats with milk, they are /62/ sprinkled with honey beer by an old man standing at the entrance and congratulated with the words: en dobollo, en daret ijōk, en dabo loscho, that is, roughly: may you become ever more numerous, make us rich, and bring prosperity to the country. During the festival the boys choose a spokesman or speaker (ol aigwenani) from their midst, whose task is to train them in comradeship and corps spirit. When the festival has lasted two days, the boys move into the various neighboring areas in order to 881 repeat it there. In this way an eŋ gebāta often lasts a month. It is 842 also to be mentioned that very many women appear at these festivals, and especially all who have up to then remained barren. The former appear in part as mothers of the celebrating boys, in part as companions of the barren ones, and the latter for their part come in order to have themselves pelted by the boys with -- fresh cattle dung, because through that they will become fruitful, according to a con- 881 viction prevailing generally among the Masai. In each of the following four to five circumcisionless years ('l ari otudunyeki 'l aijok) a [231] similar festival is celebrated. It should be mentioned further that the cattle whose meat is used to feed the participants at the eŋ gebāta festival are not killed, as is customary, by a stab in the neck, but rather by suffocation.

Let us now consider the circumcision festival:

[301] A few weeks beforehand one already sees the boys, adorned with as much ornamentation as possible, singing and dancing every day in their own and the neighboring kraals, through which they express their joy over soon being able to enter the privileged standing of the [302] warriors. On the day before the operation the boy's head is shaved, and the hair is thrown under the bed of the children in the maternal [292] hut. The boy takes off his skin cape and ornaments and dresses himself

/Illustrations from p. 163 of the original source./

232
233

Fig. 74

Buck apron.

233
• 231

C. G. Schillings phot

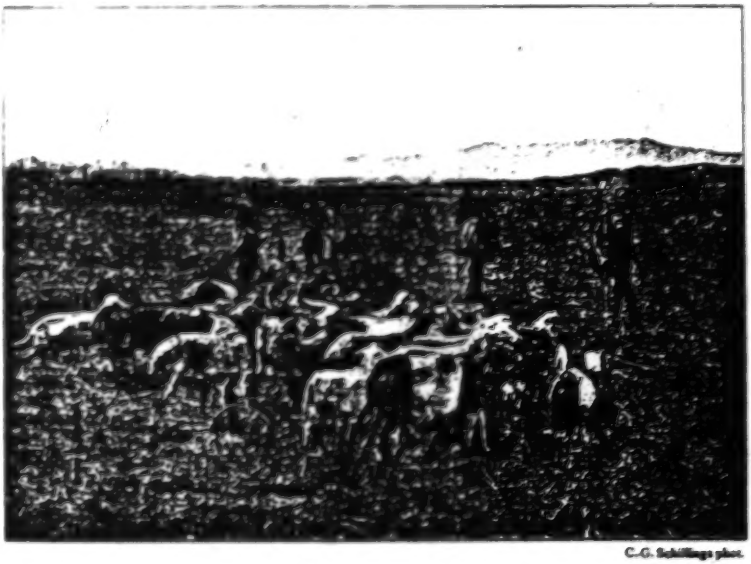
Ill. 53. Masai cattle and donkeys.

/163 cont./

232 Bulls that develop unfavorably and seem unsuitable for breeding are castrated by the smashing of the spermatic cords with the club between the wood and string of a bow (a-ídôn). The testicles are not removed, but are left to atrophy. In the same /164/ way one proceeds to castrate goats, sheep, and donkeys, but the latter always [825] not until they are fully grown. Bulls and bucks with unnatural sexual [777] instincts are slaughtered as soon as the vice is noticed, since they [784] are regarded as bringing bad luck. It is believed that, as a result of [731] their behavior, they bring the punishment of God upon the herd in the form of an epidemic.

• 231 The donkeys are small, square-built, strong, and steadfast. With nicely arched cruppers, a rounded neck, firm and fleshy shanks, they are very similar in shape to the zebra. Their coloring is a uniform light gray with a black cross over the back and shoulders. [492] They serve only to carry burdens, whereas oxen are only rarely used.

233



C.-G. Schillings phot.

Ill. 54. Masai goats and sheep.

/164 cont./

231 [613] Two breeds are distinguished, a shorter and stockier one and a longer-legged, thinner one. The latter is allegedly found only among the El barsegero lineages.

233 [821] Among the goats a small breed and a large one can be distinguished. The Masai have obtained the latter only through raiding expeditions in Pare, Unyamwesi, etc.; the true Masai goats are small. All have medium long, smooth hair, a markedly projecting forehead, and lop ears. The horns are usually only an inch long and have tips turned back somewhat. Among bucks they are larger, but also only rarely seven to eight inches. /165/ The sheep are only medium-sized compared to European ones. They have curly, coarse hair. Three breeds are distinguished, a large one (eń ger sabug = large sheep) with fat rump, a medium-sized one (eń ger kětě = small sheep), white with black head and medium-long fat tail, and a small (eń ger kiberoto; kiberoto = poor, paltry) breed and with a [232] long fat tail. Among the young female animals of the last two breeds the fat tail is cropped for fear it might be obstructive to the buck during coition.

The black-headed breed is stronger in North Africa and probably degenerated here, just like the last of the three breeds, which might

C. G. Nehalennia phot.

Ill. 55. Masai goats and sheep.

233

Ill. 57. Masai sheep.

231 [492] [177] /167/ Where the Masai are neighbors of the Somali (in British East Africa), the camel has also found entry among them as a beast of burden. They do not, however, generally share the passion of their neighbors, for whose palate the meat of these animals is a special delicacy. The Masai do not keep chickens, ducks, pigeons, etc. The attachment of the Masai to their cattle, especially to the cows, makes them seem to them like companions and friends. Thus, their habit of giving their animals names, especially considering the extravagance that the people indulge in with proper names, does not seem at all surprising. The /Ill. 58 appears here/ name Sádjaro means that the cow has come from a distance. Rímogeno was captured in the vicinity. Nondóje is a cow given as bride price. Sótoa is one such that was received as a gift from an uncle or aunt. A cow paid as fine is called Njámu. Each of the five cows that the

233 552

/167 cont./

233
422
531

Ill. 58. Bull with ornamental brand.
(the G [= Government] on the hind leg is not part of it, but would have been branded on the animal when it came to the fiscal herd.)

233
552
capturer of the first head of cattle on a war expedition receives as a reward is called Aberí. Other names for cows are: Narok-gonjék, blackeye, En dobiá, brown one, Mge, cream-colored one, Erok-logunja, blackhead, Na-njugi, red one. A male calf dropped by the cow Sódjaro is called Le-Sódjaro, while a female calf is simply given its mother's name.

231
233
422
[613]
/168/ Cattle, donkeys, and small livestock bear ownership marks. These consist of cuts or brand lines on one or both ears and of lines and curves burned on the left side of the body. The marks ([Plates 3 and 4] ol mebere, el meberen, if put on the body; ol bonóto, el bonor, if on the ears) on the cattle and donkeys

/168 cont./

231 show to what lineage or sublineage the owner belongs; those on the
233 small livestock the owner chooses for himself. Probably every lineage
422 has several distinct marks. A glance at history will explain this.
[613] In the immigration of the Masai people, accomplished little by little,
[17] each of the many bands originally formed a closed whole, which each lineage represented in it adopted a particular mark in order to make its property known. So it was natural that later on different ownership marks existed in connection with one and the same lineage, each according to the affiliation with this or that band. Besides this some that belong only to individual -- very wealthy and widely ramified -- families are also known, and then they are applied in place of the others, not together with them. The marks on the cattle are the same as those on the donkeys, although the latter bear the ear marks almost exclusively, only very rarely also those on the body. If a
[613] head of breeding cattle passes to an owner belonging to another lineage, it is usually given a new mark, and, to be sure, this one
233 then on the right side of the body. Besides the
531 ownership marks, cattle often have still other signs burned in as adornment, especially
[232] circles or a sentry-box type of design. A
[412] circle around the root of the tail and, on either side of it, one or two concentric rings on the hind legs are found especially
233 frequently among bulls. In addition to these
232 cut and brand scars, which are therefore supposed to serve in part for identification, in part for beautification purposes, there is also a third type, which arises from operations that are performed with a red-hot iron (Fig. 75) for the curing of swellings on joints and tendons. These lines, usually lattice-shaped, are also found among goats and sheep. On female calves the horn attachments are often cauterized, so that they can not butt later on. This operation further brings about, in the view of the Masai, an enlargement of the belly, desirable for leather production.

Fig. 75

/168 cont./

233 232 At births manual help is given. As soon as the cow lies down, she is held firmly by a few people; others grasp the legs of the calf coming forth and pull it out. Then it is struck against the belly of the cow a few times, so that "she will love it," and then struck on the forehead with the palm of the hand, so that "it will quickly go to the udder and suck."

233 232 Swellings on cattle, for healing, are smoked with the glowing stalks of en dulele en gare (Solanum spec.).

[230] Injuries to the feet of the cattle and goats are treated by a thorough washing with hot water and subsequent embrocation with cattle urine, as is a sort of foot rot (en jalin), which /169/ frequently appears when the cattle stand for a long time in mud and dirt during the rainy season. One tries to cure ailments of donkey hoofs by placing the hoof on a stone heated very hot and holding it there for a few moments.

[231] In describing the internal ailments of livestock I am relying chiefly on the statements of the Masai, since only exceptionally did I have an opportunity to make observations on cause, course, etc.

[237] For coughs (eng erroget) the cattle are given a thin soup consisting of milk and pulverized, charred neat-skin. Ol ebitiro bark cures diarrhea in cattle. The infusion of a decoction of ol ojengalani bark (Sesbania aegyptica) for cattle acts beneficially on the afterbirth and curatively on the birth organs. To hasten the afterbirth after a miscarriage, one gives the cow an infusion of a root decoction from the ol jogi 1 ol aiuti (a Euphorbia).

For eye inflammation one spits milk into the eye of the neat and rubs it in it, or one drips into the eye the juice of the ol aisegerai kitok (Heliotropium Steudneri Vtke).

An epidemic disease among young calves, which is supposed to lead rapidly to death, is called ol diñana or ol digina by the Masai.

[824] As the cause of the ailment they cite the eating of a certain bush en jaro (Pennisetum ciliare) and as symptom swelling of the lymph glands, which they often try to heal by cauterization (1).

1. In all the meat and fatty parts of the stricken

/173/

233 The foliage of the ol jani l el sirgon tree (Cadaba farinosa),
230 that is, tree of the donkeys, is regarded as poison for donkeys.
231 Besides a horsefly, ol gimbai l ol sirgon, from whose bite the
824 donkeys (bitten in the penis) are stricken beyond recovery, the Masai
036 also fear for donkeys and cattle the tsetse fly (Glossina morsitans), which they call en dorobbo. The latter is allegedly only dangerous to cattle if it bites them in the tip of the tongue. One seeks a cure by cauterizing the spot bitten, but the result is very doubtful.

For getting rid of fleas, one washes young livestock with an extract from the crushed plants of ol osidja gutok (Asystasia gangetica L.) or from ol abai (Microglossa spec.).

The powdered root of ol girigir (Acacia pennata Willd.) is blown into the nose of calves and small livestock, in order to drive out the maggots of the throat fly /warble fly/.

233 934 Cowbells (Fig. 77) in the form customary in Europe are found generally, but here they are hung especially on oxen and only on those cows that do not tolerate their calves. Smaller bells, often

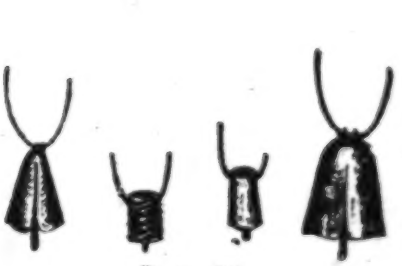


Fig. 77. (1/4)

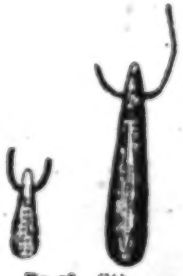


Fig. 78. (1/4)

of wood or sheep horn with wooden clappers, are worn by castrated
233 sheep and goats. As adornment one hangs around the neck of castrated calves clapper-shaped pieces of ivory (Fig. 78) or, for especially handsomely developed cattle, a leather band or a cord stitched with cowrie shells.

/173 cont./

233 [857] Small livestock and donkeys are tended by little boys, cattle by older boys, under the supervision of a few old men. Dogs are no longer used for this now; rather the livestock heeds the whistle or call of the herdsmen. To what extent this is the case is best demonstrated when Masai flee with herds of livestock. A number of men, shouting and whistling, run before and behind the herd, which rages across the steppe in a mad chase. In former times the [231] [178] herdsmen quite generally used dogs. The dogs did not serve so much to keep the herd together, but more for guarding. They announce the approach of predatory animals by barking or by hastening to the herdsmen.

231 [262] [272] /174/ As has already been mentioned above, fresh livestock blood alone or mixed with milk forms a food prized as quite particularly nourishing. The blood for this is drawn off the living cattle and goats in the following manner: A strap is tied around the animal's neck in such a way that the blood returning to the heart in the large vein is blocked by it and breathing is not affected. Then a man [411] [415] shoots an arrow (Fig. 76) with a bulb-shaped, thick tip (ol horet), from which projects a scale-shaped sharp piece of sheet iron six to eight millimeters long and equally wide, into the swollen vein, whereupon the blood squirts out in a stream and is caught in a gourd bottle (ol buguri). The bleeding is stopped by a simple untying of the strap after the operation is finished. From a strong bull or ox approximately four to five liters of blood are drawn at one time, from a cow only half as much, and this is repeated every month. No blood is drawn from good milch cows and cows with young calves. Blood is drawn from sheep by means of an incision in the depression above the eyes or between the eye and the middle of the forehead. The slaughtering of cattle is done by a stab in the neck after the front and hind legs have been fettered; goats and sheep are suffocated by having their mouths and noses held shut. Cows are never slaughtered, not even when they are too old to be used for breeding.

231 242 561 Livestock that has died is eaten. As soon as the animal is dead, one removes the skin from the neck, severs the neck veins, and catches the blood flowing out in the skin. The cutting up of a head of cattle is done with the greatest care; almost every single muscle is carved

/174 cont./

231 262 361 [593] out, since special food laws determine to which class of people this or that piece will fall. From a head of cattle slaughtered during the meateating in the bush the warrior will send his father a shoulder-blade (ol ñárebuscha) and for the wives of his father the head (ol ogunja), paunch (eñ gonjóri), the entrails (menér), feet (el ollelek), as well as the hind leg without the rear half (eñ gubés), and to the girls, the lateral belly-piece (e murté). The warriors eat all the rest of the meat. If they have visits from other warriors, the latter are entitled to the long, straight belly muscle (eñ gelemián) and rear hocks (el orescheta). On the other hand, if a head of cattle of a married man is slaughtered at the kraal, the warriors get nothing. From the cut-up animal there is put aside first for the other married men: the tongue (ol ñajéb), a shoulderblade (ol ñarebuscha), a rear hock, the rear part of the hind leg (ol móuo), the long belly-muscle; for the uncircumcised boys, the ribs (el erés), a rear hock, the filet (os sondí), the "flache /flat/ Roastbeef" -- as my cookbook calls it -- (ol oró), the heart (ol dáu). The rest of the meat is given to the women, who give the girls the lateral belly-piece and the neck (e murt) from it. The principal wife of the one to whom the slaughtered animal belongs is given the tail piece.

/175/ If the warrior slaughters a goat, the married men are given half the liver (e mónjua), the wives the paunch and head, the girls the back (en gorión) and the feet. If a married man slaughters a goat, he gives the wives the paunch, the rennet bag, spleen, entrails, and head, the girls back and feet, the boys a side of ribs, breast (ol oigoló), lungs (el kibiuk), heart, and a hind leg (eñ gedju muró), while he himself keeps the rest.

[593] From a warrom's sheep, the father gets the neck; the wives of the father, paunch, rennet bag, entrails, and liver; the sisters, feet and back. If a married man slaughters a sheep, the distribution to the women and girls is the same, and the boys receive the same pieces as from the father's goat. Of the individual pieces of meat, one boils [252] the bones for soup, furthermore the filets, the carved-out cutlets, the dark meat on the hind leg, and the heart. Everything else is roasted at the open fire. Brains and spinal marrow are not eaten, but thrown away. Bone marrow is sucked raw out of the smashed bones.

/175 cont./

136 [262] [224] Since the Masai do not eat game meat and hence do not pursue game in any way, it is usually very tame in the vicinity of the kraals and often grazes along with the cattle. The author saw an unforgettably beautiful scene in mid-1897 in the circular valley of Ngorongoro, where large herds of gnus and zebras, as well as Grant's and Thomson's gazelles, were grazing quietly and without any trace of fear beside and among the cattle herds of the Masai.

192 • 231 From the extensive nomencalture for the livestock, only the most important words are given here:

ń gischu, cattle in general;

ol oiñoni (el oiñok) or (very rarely) ol mŏ́gira, bull;

ol geteń (el moñi), ox;

eń geteń (ń gischu), cow;

eń geteń naigauo nabo, cow that has calved once;

eń geteń natoñch are, cow that has calved twice;

eń geteń 'lebon, cow that has calved a number of times;

eń geteń olobí, sterile cow;

ol gedari (el gedari), small calf in general, which stays near the kraal;

ol medimí (el medími), older calf that is pastureed farther away;

ol arám (el arami), older calf that grazes in the vicinity of the large livestock;

ol boñai (el boñaikog), male calf;

ol asche or ol ahe (el asche, el ahe), male calf;

en dâuo (en dâũno), female calf;

eńg asche (ńg asche), female calf;

os sigiria (es sirgon), donkey in general;

ol amuč (el amuč-chi), male donkey;

/176/ os sigiria oidoń (es oidoño), castrated male donkey;

es sigiria (es sirgon), female donkey;

es sigiria naigauo nabo, female donkey that has foaled once;

es sigiria eleboń, female donkey that has foaled several times;

ol gurarú (él guraruani), male donkey foal;

eń gurarú (ń guraruani), female donkey foal;

os sitimá (es sitimán), full-grown male head of small livestock;

/176 cont./

231 192 es suben (es subeni), full-grown female head of small livestock;
ol balélo (el balelón), young male head of small livestock;
em balélo (m balelón), young female head of small livestock;
ol eléruš (el eleru), head of small livestock only a few days old;
ol óro (el orol), goat buck;
ol gíne (el gínedji), castrated goat buck;
en gíne (eń ginedji), she-goat;
eń gine eleboń, she-goat that has dropped young several times;
es suben eń gine, she-goat that has not yet dropped young;
olńbalelo l eń gine, male kid;
em balel' en gine, female kid;
ol meregéšch (el meregeschi), ram;
ol gér (el gera), castrated ram;
eń ger (ń gera), sheep;
eń ger eleboń, sheep that has dropped young several times;
es suben eń ger, sheep that has not yet dropped young;
ol balelo l eń ger, male lamb;
em balel' eń ger, female lamb.

233 31 [823] The far greater part of the steppes offers excellent pasture; only smaller or larger isolated stretches are quite unsuitable for this. The Masai know these precisely and scrupulously avoid them. What makes them unusable is first of all the occurrence of grasses that bring about digestive disorders and the lack of salt in sufficient quantities, through which a similar effect is brought about. In good pasturing places one [135] always finds salt licks. The rain water standing in a depression in the ground has leached out the very saliferous earth and, after evaporation, [825] has left behind a more or less strong, gray crust of salt. It is self-evident that one avoids those places about which the presence of the above-mentioned harmful insects is known. It is striking, however, that ticks are not feared at all.

361 233 When the pasture around the kraal has been grazed off, a change of dwelling is decided upon, which takes place as soon as a new pasture ground has been found by a few people sent out. Then there is activity in the kraal long before daybreak. After the cows have been milked, the cattle moves off as the first party. Then the herds of goats and sheep follows, and after these /177/ the calves. Young

/337 cont./

*539 *773 *171 *121 Biblical author merely inserted into the traditional framework of the primeval-age lawgiving the laws that were modified or had become necessary as a consequence of the sedentation, the changes way of life and outlook, with at the same time omission of the commandments that were lost for the same reason or pushed out of the favored position as a consequence of their reduced significance.

Some Further Points of Contact

In a mythical account the Masai show why dogs are regarded as unclean and live only on disgusting food; God himself condemned them to this.

*539 *773 *171 *121 • 231 In view of this, it seems noteworthy that the authors of the Jahve /Yahweh/ and Elohim doucments, that is, precisely probably the oldest sources of the Pentateuch, put into the mouth of God utteranees through which dogs are represented as disgusting animals. Thus, the Jahvist /Yahwist/ reports in 2nd Moses /Exodus/ 11, 7: And Jahve said to Moses: "But against any of the children of Israel shall not a dog point his tongue, from man to livestock, that ye may know that Jahve makes a distinction between Egypt and Israel." And the Elohim Document states, 2nd Moses /Exodus/ 22, 30 /sic; see 22, 31/: "And ye shall be holy men unto me, and ye shall not eat flesh torn off in the field; ye shall cast it to the dogs (1)."

1. Cf. also 5th Moses /Deuteronomy/ 23, 59 /sic; see 23, 18/ male whores = dogs. F. Hommel.

*539 *773 *171 *121 [184] Just as 'Ng ai punishes the Masai who transgress his commands by epidemics, so it is also Jahve's /Yahweh's/ nature to send plagues if the human beings otherwise do not want to submit to his will and complain about him. From the time before the lawgiving we know of the ten plagues by which Jahve forces the Egyptians to let the Israelites depart. Then later the wrath of God is turned against Israel. 4th Moses /Numbers/ 11 tells of a great fire in the camp at the place Tabera /Taberah/, as well as a great disaster among the people in Kibroth Hatthaawa /Kibroth-hattaavah/, the place of the graves of

124 [191] Swahili. Many Masai in the area speak some Swahili, so using Swahili and a limited number of Masai nouns we usually could converse with Masai throughout the study area. Occasionally we had the services of interpreters.

123 [609] These Masai regard visitors in their country with interest and guarded suspicion. The suspicion is greatest if they believe the visitors are representatives of the Government. After we had lived on safari in Western Masailand for some months constantly moving from place to place the Masai appeared to accept us as a harmless, neutral, and occasionally interesting phenomenon.

Our status with them was helped by our work [231] [181] with grass and animals. Above all else the Masai appear concerned with animal husbandry. They have a lively interest in wild animals, appreciation for domestic livestock that is almost reverence, and an understanding of the importance of grass. Our work on these things therefore seemed understandable. Beyond the frequent initial query: were we with the Government, there was never any question of why we were working there. The Masai appear to accept without question that white men are prone to the strangest behavior. Movie companies and some tourists fortify this conviction.

Their[1]
*233 livestock, described below, consist of herds of cattle,
• [231] sheep, goats and donkeys. The Masai way of life revolves around the grazing and water requirements of their livestock.

621
561 Their principal units of social organization, as they affect this discussion, are sections, age grades, 614 villages, and families. Clans have an important place 177 in ethnological discussions and in some areas they 178 determine matters such as water rights (Fosbrooke, 1948). Our impression is that throughout most of Western Masailand the concept of clans is of more ethnological than ecological interest. One basic reason for this is the effect of the Government administration in Western Masailand.

With the physical and social upheavels in both Kenya and Tanganyika from the 1880's through about 1920, the establishment of African District Councils (District-wide governing bodies), creation of the park and conservation unit, and various development projects, the clan and other social units have been greatly disrupted. Grant (1954, 1957) describes this effect in some detail for the Masai in the former boundaries of the Serengeti National Park.

[1] [i.e., the Masai.--Analyst]

595 and so on. The wife is given a specified number of cattle to keep in trust for her son, and she and the children also tend young animals in the herds.

342 These huts are about five feet high and of varying dimensions, but usually roughly square and 10 to 20 feet across. The door is very low. Just inside the door there is normally a baffle wall of loosely woven twigs. Beyond that there are often two or three rooms, each divided from the others by a low open wall of [231] [513] twigs. Young livestock are brought into one of the rooms and the others serve for sleeping and cooking. [352] [354] Usually the beds are platforms of twigs and grass covered by hides. The cooking fire is in a far corner and is very small, normally with three stones around it to support pots. There is no smoke hole in the roof. The outer walls and roof are an open mesh of wattle often interwoven with coarse grass and shrubs. Support comes from larger branches and small logs up to about six inches in diameter. The exterior and walls and roof, and the insides of the door opening are plastered with [184] a mixture of mud, cattle dung, and short grasses. Hut [462] design varies slightly from area to area. Constructing the huts is women's work. Men occasionally help in collecting larger trees and bushes.

562 eat meat from wildebeests and gazelles. When I shot an elephant near one boma the Masai women turned out in [252] force. They spent most of the day cutting off strips of [462] subcutaneous fat and some flesh. A few elders joined [825] the women in the cutting. Several Masai requested fat from a lion I had shot (which had been raiding their boma), but they said that their use was for medicine rather than food. We have records, therefore, of Masai eating (or taking to eat) wildebeest, Grant's gazelle, Thomson's gazelle, elephant, buffalo, eland, and kongoni.

Cattle are usually eaten when they die. Cows are rarely slaughtered, although bullocks sometimes are killed for food and prize ones are killed and eaten [562] by men at ceremonies. We have watched women picking up the remains after livestock have been slaughtered, and Millais (1920) spoke of Masai women eating offal and other remains of oxen or sheep after the men were through eating.

• 231 272 Bleeding of cows and sheep is accomplished by tying a thong about the animal's neck so the jugular swells, then shooting a partially blocked arrow into the jugular vein and catching the spurting blood in a gourd.

231/272 When they have enough blood, the thong is released and the small wound covered with mud or dung, and the animal runs off apparently none the worse for wear. The blood is drunk warm, or mixed with milk.

146 Although they are thin, the Masai appear adequately nourished, and they have great physical endurance. The Ministry of Health doctors told us that Masailand was the only part of East Africa in their experience where the children did not show signs of Kwashiorkor or the other diseases of malnutition that are so common with Africans. Gale (1960) noted that the greatest defect in the diet of the East Africans is lack of animal protein, but this is true of the Masai only in times of extreme drought.

291 [386] Clothing, Jewelry and Utensils: The traditional clothing of Masai men and women is an ochre colored cloak of cloth, usually gathered over one shoulder. Some wear (292] skins, usually of sheep. A cow hide is used for a rain coat. Most Masai men wear sandals made from heavy leather or old rubber automobile tires. Very little else is worn by either Masai men or women, except near missions where the women occasionally wear more concealing cloaks.

178 above made it difficult to amass large herds for any
233 long period of time. The cattle numbers probably fluctuated greatly, depending on factors such as disease and drought. The English administration has provided excellent veterinary services, all but eliminating most diseases. They have provided water holes in otherwise dry areas to spread the grazing pressure. Predators have been killed wherever they
[721] molest Masai livestock. Cattle raiding has been considerably reduced, and in Western Masailand most of the raiding is by Masai augmenting their herds from neighboring tribes, rather than vice versa.

With the other natural limiting factors largely removed and no artificial ones imposed in their place there has been nothing to stop the increase in herds but the carrying capacity of their rangelands.

233 In Narok District, for example, in April
231 1956 the cattle population was about 330,000 head (Dept. Vet. Services, 1958). By April 1958 the population had risen to about 378,000 head (Ibid.), and in May of 1960 it was reported at 450,000 head (Mann, 1960). This represented an increase of over 36 per cent in four years.

19: Talbot K-4,5 (1956-1962)1964 FL12 Masai FL12

*233
•231 In 1904 the cattle numbers in Masailand of Kenya were estimated at about 50,000, and there were an estimated 600,000 sheep (Simon, 1962). By 1961 the Kenya Masai had a population of 973,000 head of cattle, 660,000 sheep and goats, and a large number of donkeys, "at least double the quantity that their land will carry during normal conditions" (Glover and Gwynne, 1961).

*233
232
182 Range Management of the Masai: Grass is recognized by the Masai as being important to their livestock. But in general those in Western Masailand appeared to have surprisingly little appreciation of the types of grass that were preferred by their livestock or of the effect of varying grazing pressures on the grasses. There are Masai names for a number of the grasses. Yet many Masai in the study area only know a few of the more common ones. When discussing grass foods the Masai almost invariably say that the cattle eat grass, as do the wild animals. There appears to be little appreciation of the differing diets or well defined preferences exhibited by these animals (see below). When inquiring about the names or characteristics of various grasses the typical answer we recieved was to the effect that we were fundis (experts) on grasses, while they were fundis on livestock. They would then point out that in a herd of several hundred animals they knew

19: Talbot K-4,5 (1956-1962)1964 FL12 Masai FL12

*233
*13
232
731
182

A several years' drought culminated in 1961, and as a result of the extreme overgrazing in Eastern Masailand, thousands of cattle and many Masai died. As was evident on the ground, and as clearly pointed out by many -- even veterinary officers (Waddington, 1961) -- the mortality was due to starvation on range depleted by overgrazing before the drought. There was plenty of water for the animals to drink. The mortality in the cattle of Eastern Masailand ran from 300,000 to over 400,000 head, and I was told that over 1,000 Masai starved to death also. In spite of this dramatic illustration, the Masai to whom I talked in 1962 blamed their difficulties on the will of God or the Europeans who appropriated their land.

*136
*233
• 231

Masai Livestock: The Masai cattle of Western Masailand today are a mixture of breeds with short-horned zebu (Bos indicus) predominating. The Masai highly prize longer horned animals, and occasional herds will have a massive-horned Hamitic Ankole bull. It has been suggested (Payne, and Masai, verbal) that before the rinderpest epidemic of the 1890's the Masai cattle were predominantly long-horned. The rinderpest epidemic wiped out most of these animals, and the short-horn zebu, with its greater resistence to rinderpest, took their place. The short-horn zebu was introduced from

19: Talbot E-4,5 (1956-1962)1964 FL12 Masai FL12

Southern Asia by both Arab and Indian traders following the Arab invasion of A.D. 669 and it is still spreading (Williamson and Payne, 1959).

The present cattle represent what the Masai have bought, traded, or stolen since the 1890's. Since these processes, especially the latter, are still going on, the cattle appear very mixed. One can even see an occasional Holstein among the mixed zebu in Masai herds.

I should be pointed out, however, that stealing is a relative term. According to the Masai, all cattle in the world belong to them, or at least were created for them. It appears that in their way of looking at things, it is not wrong to steal if the object is a cow; they are merely rectifying an obvious administrative error. Doubtless also the excitement and danger involved in a raid appeals to bored moran who have been brought up on stories of the glories of warfare.

Occasional prize steers will weigh over 1,000 pounds, but because of the animal husbandry practices the average weight of Masai range cattle is nearer 350 pounds. These animals require five to seven years to reach adult weight. The average liveweight gain per day is in the neighborhood of 0.3 pounds (Ledger, et. al., 1961). The cows will breed when about three and a half years old. These

19: Talbot E-4,5 (1956-1962)1964 FL12 Masai FL12

*233
*136
• 231

same animals when removed from Masai care and put on good forage may almost double their weight and growth rate.

Masai goats are of the long-legged meat goat type described by Williamson and Payne (1959). The average liveweight of adult Masai goats is probably between 40 and 45 pounds. The largest we saw weighed at the Narok slaughter house weighed 44 pounds. They attain their maximum weight at around 18 months.

Masai sheep are a fat-tailed, coarse-wooled animal whose color varies but dark browns predominate. Adult weights average around 44 pounds, but with better feeding they may attain 100 pounds. The largest we saw weighed was 85 pounds. On good forage they put on a liveweight gain of about 0.12 pounds a day for about 18 months. On satisfactory forage these sheep can have their first oestrus at about 9 months of age (Williamson and Payne, op.cit.)

[492]

Large numbers of donkeys are kept by the Masai in addition to their other livestock. The reason given for keeping them is for use as pack animals when bomas are moved. Occasionally they are used for carrying fire wood when the sources of wood are distant from the boma.

*233
• 231 We had the feeling, however, that donkeys just as other
554 livestock are a measure of success and security, and regardless of the need some donkeys would be maintained.

*136 These donkeys are small animals whose weight
231 is probably less than half that of a wildebeest (i.e.
*233 under 200 pounds). They are quite independent. We often saw the small herds of donkeys leave a boma unherded and go to a water hole, then graze back to the boma. This practice probably would not be followed in areas where predators were common, but in the peripheral areas it appeared to be the rule.

178 Large numbers of donkeys appear to have been
231 the rule for some time. Joelson in a general discussion
*233 of East Africa in 1928 referred (p.61) to the "Masai, who graze immense herds of cattle, small stock, and especially donkeys..."

*233
182 Burning
232 The Masai burn grass whenever it is dry enough
824 to ignite. The reasons they give for burning include the following: It produces a flush of new grass that is particularly palatable, nutritious and easily available for their livestock. It clears the woody growth and makes new grazingland. It clears or reduces ticks, tsetse fly, and disease.

19: Talbot E-4,5 (1956-1962)1964 FL12 Masai FL12

*233
*136
• 231

Of the ten species of grass which make up 90 per cent of the wildebeests' diet as calculated in Table 16, only two, Themeda triandra and Cynodon dactylon are also important forage for domestic livestock. Themeda triandra is excellent forage while Cynodon dactylon varies widely in its palatability for livestock (Bogdan, 1958; Heady, 1960). Themeda triandra rapidly disappears from overgrazed ranges. Cynodon dactylon, however, thrives on disturbed ground and is more tolerant of heavy grazing than Themeda. The other grasses which are important in the wildebeests' diet are rarely eaten by domestic livestock. On overgrazed ranges in the study area they become dominant after the grasses such as Themeda which are more palatable to livestock are grazed out (Heady, 1960; Talbot, 1960c). In general, these other grasses "are low producing plants of poor palatability [for domestic livestock, L.T.] and their dominance indicates poor condition ranges." (Heady, 1960:13).

Therefore there is direct competition between wildebeests and domestic livestock for only two species of grasses; one of these, however, is the most important single item in the wildebeests' diet. It also is one of the first grasses to disappear under heavy

livestock grazing. Consequently, overgrazing by domestic livestock can seriously reduce the carrying capacity of rangeland for wildebeests, even though there is relatively little direct competition between them in terms of total numbers of grass species involved.

(b) Other Ungulates: In addition to the wildebeest data, we have stomach sample analyses from 130 other animals of ten species: Thomson's gazelle, Grant's gazelle, topi, kongoni, impala, zebra, buffalo, dik dik, giraffe, and rhinoceros. We also have observational data from elephants, giraffes and rhinos whose food habits, unlike the plainsland graziers, are possible to identify from observation alone.

The results of these studies show that each ungulate species has a preferred diet which is to a large degree complementary to -- not duplicating -- the diets of the other ungulates. These diets are maintained throughout the year, where necessary the animals traveling long distances to find their preferred foods at the preferred stage of growth. The diets involve different classes of food (e.g. trees, shrubs, forbs, grasses), different species of food plant within a class, and different stages of growth of the same food plant.

#136 been one overall accurate census of the region. Indirect evidence of increases in the numbers of smaller ungulates #13 would come from overgrazing. The areas most heavily • 231 overgrazed are those grazed by domestic livestock. #233 In Kenya the areas not available to domestic livestock do not show overgrazing, but in parts of Western Masailand in Tanganyika there is local overgrazing in such areas.

#136 As discussed above, the predation at its present level does not appear to be a limiting factor. In past years, however, the predator populations were far higher. Wild dogs are rare in the area at present. We estimated their population at between 75 and 150 for the entire Western Masailand. For years it has been the custom of white hunters and many game and park wardens to shoot the animals. Monty Moore, the game warden who lived at Bonagi in the 1930's, killed every one he could, and told of one case where he killed 90 out of a pack of 92.

Lions were considered vermin until recent years and literally thousands were killed. As noted above, almost 300 were legally killed in the Mara between 1945 and 1948. Individual hunters such as S.E. White could and did

19: Talbot E-4,5 (1956-1962)1964 FL12 Masai FL12

713

UNGULATE BIOMASS

For calculations of biomass, we obtained the numbers of animals and their sex and age ratios as described above. The weight data from our own work and that of our cooperators enabled us to establish average figures for males, females, and various age groups in the populations and to use these specific weights -- instead of arbitrary averages -- to determine biomass.

Table 25 presents the yearlong biomass data for the study area. The actual ungulate habitat within the study area covers about 10,660 square miles. Of this, about 3,144 square miles are open grassland and 7,515 square miles are bush. There is a relatively low population of animals resident in the bush country, including elephants, buffaloes, impalas, waterbucks, giraffes, rhinoceroses, and some topis and kongonis.

The yearlong biomass from these animals is about 3,008 pounds per square mile. The bulk of the wild animals are migratory, and these include Thomson's gazelles, wildebeests, zebras, elands, and some topis and kongonis. These animals spend the wet seasons in the open grasslands and the dry seasons in the bush. Domestic livestock, Masai cattle, goats, sheep and donkeys also graze the

TEXT CONTINUED ON PAGE 314

#13
231
#233

Table 25. YEARLONG STANDING CROPS OF DOMESTIC LIVESTOCK AND WILD UNGULATES IN THE SERENGETI-MARA STUDY AREA

Type of Range	Approximate Area square miles	Animals	Approximate Yearlong Standing Crop pounds / square mile
Grassland, savanna, and bush	10,700	12 wild ungulates(2) 4 domestic ungulates(3)	30,200(2)
Bush	7,300	12 wild ungulates(2) 4 domestic ungulates(3)	23,300(2)
Open grassland	3,150	6 wild ungulates(2) 4 domestic ungulates(3)	46,800(2)
Savanna(1)	1,000 - 2,000	12 wild ungulates(2)	70,000 - 100,000(2)
Bush(1)	2,000 - 3,000	12 wild ungulates(2)	30,000(2)

(1) Ungrazed by domestic livestock, generally within about five miles of water.

(2) Fifteen additional species of ungulates are present in the area, but they are either smaller or rarer than the 12 included and their numbers are not known, so their biomass is not included. Therefore the biomass figures as given are low.

(3) Cattle, sheep, goats, and donkeys grazed by the Masai tribes.

19: Talbot K-4,5 (1956-1962)1964 FL12 Masai FL12

*13 open plains during the wet seasons. Some of them follow
• 231 the wildlife into the bush country during the dry seasons,
*233 and some leave the region, moving to grazing lands in
*13 the adjacent highlands. For roughly six months each year the open grasslands support a biomass of about 93,545 pounds per square mile, and for the remaining six months they are virtually empty of ungulates. The yearlong average biomass, then, is about 46,773 pounds per square mile.

During the six dry season months the bush country supports a biomass of 37,549 pounds per square mile, made up of the migratory animals plus the few resident ones. The average yearlong biomass in the bush country is about 23,299 pounds per square mile.

*13 The overall average yearlong biomass, i.e.
231 the weights of the average wildlife and domestic livestock
*233 populations divided by the square miles of the area, has been 30,214 pounds per square mile of which 80.2 per cent is wildlife and 19.8 per cent domestic livestock.(1)

---

(1) These figures refer to conditions up to about 1960, when livestock was removed from part of the area in Tanganyika through changes in regulations affecting grazing.

*13 These overall figures, however, do not necessarily reflect the true carrying capacity of the landscape. Much of the area provides virtually no food for the ungulates, and serves largely as areas of transit, travel routes. Other areas, especially those within about five miles of reliable water supplies and those not grazed by domestic livestock, support extremely high yearlong biomass. In the realtively well watered savanna country midway between the vast open grasslands and the true bush the yearlong ungulate biomass ranges from around 70,000 to 100,000 pounds per square mile, and even in the bush country, within about five miles of water the yearlong average is well over 30,000 pounds per square mile. There is no evidence of overgrazing with these stocking rates.

*13
• 231
#233 The average biomass obtained from cattle, goats and sheep under native herding is about 11,000 to 16,000 pounds per square mile in the equivalent savanna, and 2,000 to 8,000 pounds per square mile in the bush. Under this degree of grazing intensity the habitat shows evidence of moderate to severe overgrazing.

*13 An even more striking comparison can be made with European cattle ranches in equivalent high savanna. In these areas, with careful management including fencing

19: Talbot K-4,5 (1956-1962)1964 FL12 Masai FL12

GRAZING

*137 Domestic Livestock

-231 *233 Domestic livestock show clear preferences for certain grasses in the study area (Heady, 1960; Talbot, 1960; and above). The preferences of cattle, sheep, goats, and donkeys largely overlap. Although goats are reputed to be browsers, in the study area they graze with the sheep and their preferences appear the same. When preferred grasses are not available livestock will resort to whatever plants are left, but before resorting to second choice foods they will seek out and eat

*137 most of the first choice ones. If grazing pressure is too great the preferred grasses will be eaten out and will remain only as occasional relic plants protected from grazing by thorn bushes and rocks. Heavier grazing pressure will remove second choice foods leaving only the least palatable plants and those protected by spines or similar growth.

*[136] Different species of wild ungulates have clear preferences in food plants also, as described above. Thus, by analysis of the grass composition of an area, it should be possible to determine its recent grazing history.

*137 *114 Part of Dr. Heady's grassland research in East Africa involved this type of determination, and a summary of

*13
[231]
[233]

Figure 65.

Originally Themeda grassland, heavily grazed by domestic livestock for about five years. Most Themeda is gone and the dominant grass is Pennisetum mezianum, ungrazed by domestic livestock. Although the crown cover seen here appears good, the basal cover is only around five per cent. There are about five common species of grass here.

19: Talbot E-4,5 (1956-1962)1964 FL12 Masai FL12

*13
[231]
*[233]

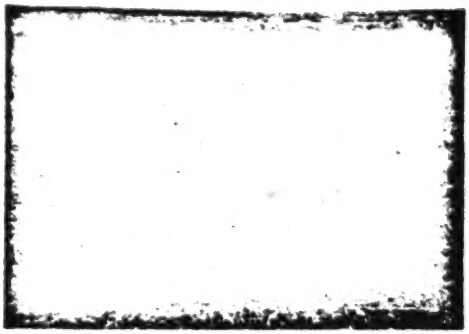


Figure 67.

Themdea grassland grazed seasonally by cattle for one year and sheep and goats for about four years. The species composition has been changed, basal cover reduced, and since fires have been excluded by heavy grazing, shrubs are invading.

*137
*[136] by tsetse fly -- so must have been relatively open.

[101] 1850-1890: This appears to have been a period of
• [231] increased burning, expansion of the Masai into the lands
*[233] north of the Serengeti up to the Mara Plains, and increasing numbers of livestock. The open grasslands reached their greatest extent during this period, and the area between the Serengeti Plain and the Mara became open grassland with riverine forest and scattered thickets, much like the present southern Mara Plains (Fig. 79a).

*134 The Masai apparently extended their grazing and
*137 particularly burning far up into the Mau Escarpment.
[101] Spectacular erosion can be seen over much of the Mau Escarpment north and east of the Loita Plain. Virtually no top soil can be seen over hundreds of square miles at the lower elevations, and where some does remain it may be 10 to 14 feet above the present ground level, on top of a pedestal of earth held against erosion by the roots of a few surviving cedar trees. Trees growing in the bottom of these erosion scars in 1960 were dated as being 50 to 80 years old which would put the period of recovery in the late 1800's at or after
[101] the disasters of the Masai. During the period of dry years culminating in 1961 the Masai extended their

*137 similar growth invaded the grasslands. Subsequent burning, modified by the grazing of wild ungulates, has somewhat stabilized the invading thorn trees in a thin bush or woodland which fills the former open grassland surrounding the thickets, riverine forest and taller woodland. To some extent the invading thorn trees have been cleared from the flats near the watercourses. As described above, such areas tend to support hotter fires. Most of these areas did have Acacias since stumps are frequent.

• [234] [178] *[233] With the increasing numbers of their livestock, the Masai have tried to clear as much land as possible for pasture. Their extensive burning, plus elephant damage in the Mara area, has been rapidly reducing the woody vegetation during the past 20 years or so. Their burning has been restricting the range of the tsetse fly in the north. Yet while they are reducing the larger woody growth, the smaller growth such as Whistling Thorn is rapidly increasing on many of their grazing lands. On the Mau Escarpment their fire-created increases in grazing land at the expense of the cedar forest are being off set by expansion of the land covered by leleshwa bush, which invades overgrazed, underburned grassland in cedar forest areas in much the same way Whistling Thorn invades lower grasslands.

*13
• [231]
*[233] Also as the herds of domestic livestock have increased the entire area available for their grazing has become seriously overgrazed. Every area of tall grass plains available to the Masai has been overgrazed into short grass plains, weedlands, brushlands, or semi-desert.

The movements of the migratory wild ungulates through the area are strongly affected by the effects of fire and grazing. When the area south of the Mara Plains does not burn, the strip of tall dry grass provides a barrier for most forms of wildlife and the Kenya animals are effectively separated from the Tanganyika ones. During the pre 1890 period there was probably a much freer movement of wildlife through the then-open lands between the Mara and the Serengeti Plains.

The overgrazing-induced short grass plains have affected some animals' distributions. We have found that topi, for example, are limited to tall grass plains. Their present distribution in Western Masailand is precisely limited to the tall grass areas. Yet in the early 1900's White (1915) recorded them in the Loita Plateau, around and west of Loliondo, and east of the Guaso Nyiro River.

21:Huxley Q, T-5 (no date) 1960 FL11 Luo
Masai FL12

133
231
793

15 The Rev. Daudi Mokinyo, a Masai parson, on his ranch; and some of the lions who share his country

136
133

[facing P. 128]

21:Huxley Q, T-5 (no date) 1960 FL11 Luo
Masai FL12

imbecility—or perhaps not remarkable, since nothing has been more characteristic of the half-century of European intervention in Africa than the slap-happy introduction of bright, well-meaning ideas by enthusiasts of all kinds, without any regard for their long-term consequences.

Anyway, vets controlled diseases, livestock multiplied and their hoofs and mouths destroyed the precarious grass cover of the plains. The result is that, except where the tsetse fly remains in control, the Masai are living in country poised upon the edge of deserthood. Some of it has gone over the edge, some hovers on the borderline, some has not reached it yet. And so pressure mounts upon those regions that are still protected by the tsetse fly.

Overcrowded people outside want to get in, overstocked Masai themselves want to take their herds where grazing is still rich and deep. If either succeed, unless they adopt very different methods, they will destroy those regions as surely as they have damaged their present inheritance. Agricolas and vets do not want to see these last remaining areas opened up without strict control. But governments are terrified of controlling anyone by what may be represented as harsh measures, and administrators have inclined to caution since the Masai speared to death a D.C. who was persuading them to sell some steers. So the matter, like many others, rests in a state of suspended flux, and everyone hopes for good rains.

III

Down on the Kenya–Tanganyika border, not so very long ago, there lived an Englishman who kept in touch with the world by carrier-pigeon. For three or four months of the year no vehicle could reach him, and even in the dry weather it was a long, hard, bumpy seventy-mile journey from Narok, where the road ends. The aeroplane has changed all that. An hour's pleasant flight from Nairobi brought us comfortably to rest beside a tributary of the Mara river.

First we flew over the Mau, that range of mountains forming the south-western wall of the Rift Valley. Covered with forests of cedars and olives and, higher up, of bamboos, the